

# BUTANE-PROPANE *News*

A CHILTON PUBLICATION

NOVEMBER 1960

*BPN reports  
on the  
Festival of Flame*

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

## *Are your delivery costs too high*

When your customers' tanks or bottles are metered you can fill or exchange them at your own convenience. This permits you to schedule truck deliveries on a regular route basis without costly backtracking. And with meters you'll eliminate those nuisance calls for after-hours service. You'll



save truck miles, time and, of course, money. Get facts now on all the advantages that go with vapor-metering. Write for our fact packed bulletin Adv. 41. Rockwell Manufacturing Company, Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Guelph, Ont.

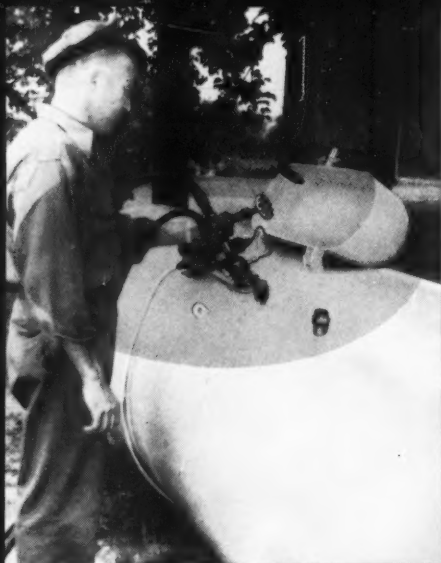
## VAPOR METERING

*will improve your profit picture*

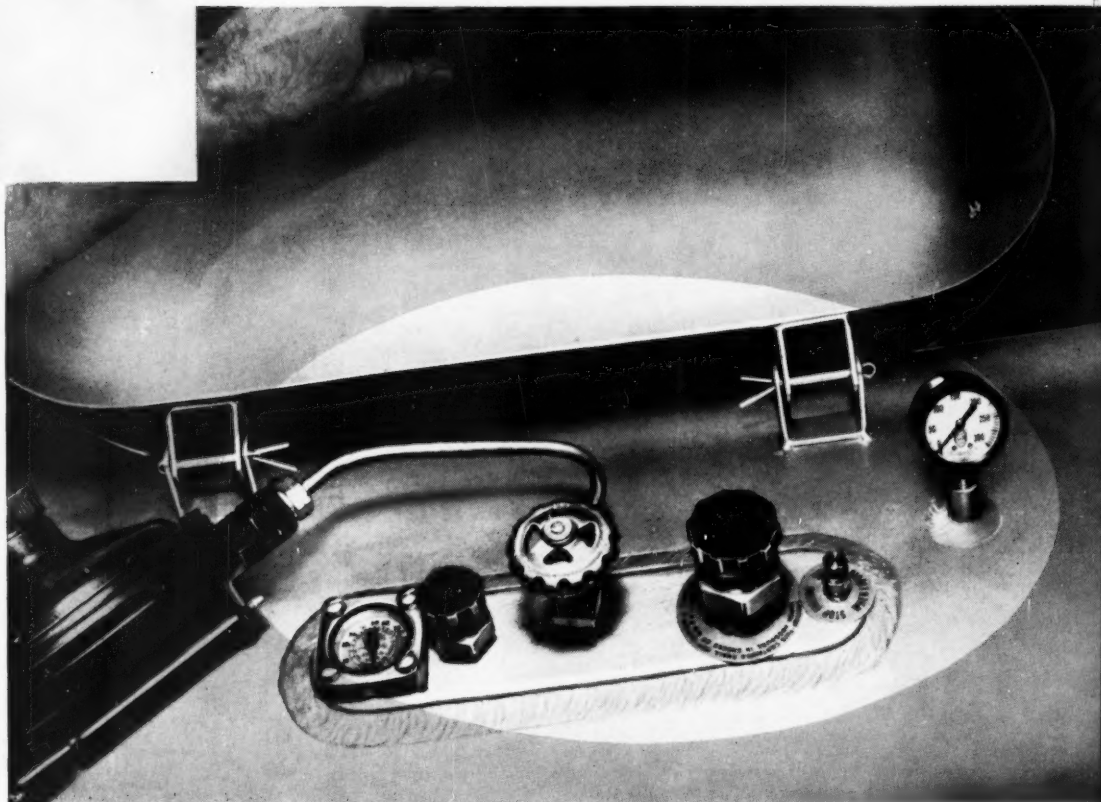
### THE MODERN WAY TO SELL LP-GAS

Thousands of these meters are in service, making money by saving money for LP-Gas distributors. The Rockwell LPG meter has smart, modern lines. It is cased in a strong, weatherproof aluminum alloy housing. Its capacity rating of up to 240,000 Btu's per hour is ample both for today's and tomorrow's loads.





# separate fittings make **HACKNEY** systems more profitable for you



Popular 500-gallon shoulder-mounted system, Model S37-499.

Separate fittings, shoulder-mounted on the tank, mean more profits for you when you use Hackney LP-Gas systems. Controlled tests in our laboratory prove you fill faster because the separate filler valve fills directly into the vapor phase. And shoulder-mounting fittings save stretch and strain on delivery hoses, too. Faster filling and savings in operator time mean *more calls per day—more profits for you.*

Hackney LP-Gas systems have the sturdy, tested construction that assures long life with lowest maintenance, greater safety and complete customer satisfaction. A bottom Chek-Lok is furnished for convenient evacuation, and for use in liquid withdrawal for filling motor fuel tanks on tractors, trucks, etc. Write for specifications on Hackney systems from 250 to 3360 gallons (W.C.).



## Pressed Steel Tank Company

Manufacturer of Hackney Products Since 1902

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Branch offices in principal cities

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS



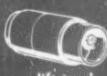
cylinders



systems



fuel tanks for  
trucks and tractors



lift truck  
cylinders



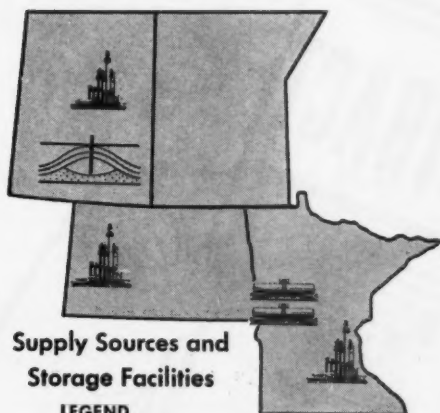
tank trucks



transports

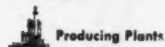


bulk storage tanks



Supply Sources and  
Storage Facilities

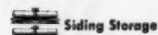
LEGEND



Producing Plants



Underground Storage



Siding Storage



Facilities like this contracted to United will put additional millions of gallons of LP Gas at our disposal for fast rail and transport delivery to bulk plant customers this winter.

# Now— all this plus pipeline gas from United

Now, added to the 10-Point Service Plan that made us famous for worry-free fuel service, comes PIPELINE LP GAS. Terminal facilities in Iowa, Wisconsin and Minnesota will be available to us by December, making speedy fuel supply to our Upper Midwest customers doubly certain.



More than ever this year we can say:  
You've never had fuel service so good 'til you've had it from United.  
Try us and see!



## UNITED PETROLEUM GAS COMPANY

4820 Excelsior Blvd., Minneapolis 16, Minn. • WA 7-9981

# FOR A BETTER

# CHECK

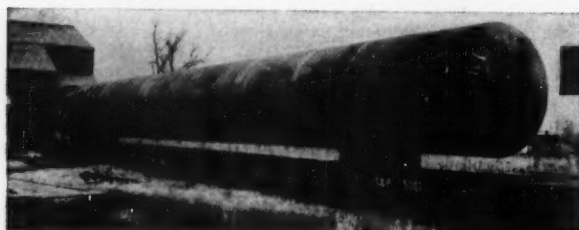
## STORAGE, TRANSPORTS DELIVERY TRUCKS

When it comes to PROFITS...Master Tank will fill your needs on storage, transports and delivery. Here's where you make those extras for a better contract. Call us today at Dallas or Quincy...we are producing and shipping right now!

# CONTRACT

Master Tank  
Dallas, Texas

TRANSPORTS  
STORAGE  
DELIVERY TRUCKS  
MASTER TANK  
DALLAS, TEXAS  
QUINCY, ILLINOIS



### STORAGE

ON ALL SIZES THROUGH 70,000 GALLONS

There's NO LIMIT to the storage capacity of Master Pressure Vessels. Whatever size you require we build to meet your specifications.



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LIGHT-WEIGHT T-1 STEEL

Designed by dealers... Master transports of miracle lightweight T-1 steel. Fitting your specifications to any size from 10,000 water gallons and up. Engineered and built to meet the latest codes. Fully X-rayed and sand blasted. Simplified plumbing system.



### DELIVERY TRUCKS

SINGLE OR TWIN BARREL

Time is money...and the "Time-Saver" saves you money. Take your choice... the single barrel or the twin. Faster loading and faster pumping means less time at the dock and less time at each stop. Each truck is engineered to meet your individual requirements. Write or call today.



MASTERPIECES OF  
STEEL FABRICATION

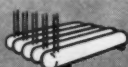
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TRANSPORTS



TANK TRUCKS



STORAGE



DOMESTIC



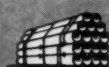
FILLING STATIONS



FARM CARTS



REFINERY



LINE PIPE



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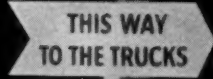
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**GREATEST  
SHOW ON  
WORTH!!!**



# 1961 CHEVROLET STURDI-BILT TRUCKS! PROVED WORTH MORE BECAUSE THEY WORK MORE

A gigantic advance in trucking began just a year ago, when the first Torsion-Spring Chevy nosed out onto a highway. With a vastly different truck design, featuring torsion-bar independent suspension, this totally new Chevy did just about everything better. And it caught on fast. So fast, in fact, that already there are nearly 300,000 Torsion-Spring Chevies putting out this new kind of working ability on tough jobs all over America. Now, for 1961, Chevrolet introduces trucks with even more of the worth-more, work-more performance that's won such wide owner acclaim over the past year. Even more strength, even more stamina—and an even wider range of models!

**MORE MODELS THAN EVER BEFORE!** 189 models—work-proved dollar savers in every weight class! 1961 Chevies for every hauling chore in the book include three new long-wheelbase 4-wheel drive models, sturdy Stepside and Fleetside pickups, spacious panels, versatile Suburban Carryalls, handy Step-Vans and forward control chassis, tough chassis-cabs of all sizes, mountain-moving tandems. Somewhere in this long, *long* line is the one truck that makes the most sense on your job!

**OWNER-PROVED TORSION-SPRING RIDE!** It puts an end to I-beam axle shimmy! Independently suspended front wheels step right over bumps, tough torsion-bar springs soak up jolts. New smoothness speeds up schedules, cuts truck wear and maintenance expense, reduces cargo damage and driver fatigue. Owners report that there's never been anything like it for high-profit hauling!

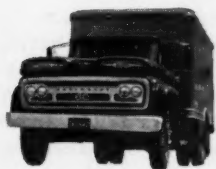
**STRONG, ROOMY CABS THAT HELP BOOST YOUR WORK OUTPUT!** Rangy drivers ride in comfort with extra hip room, leg room and head room. Seeing is safe and easy through a whopping big wraparound windshield. The seat's a beauty, too—a full 59½" wide with a spring combination inside that gives just the right support. (And for the last word in working comfort, special 6" foam rubber padding is optional at extra cost.) And the

*rugged* cab build includes all-steel construction, double-panel roof and double-walled cowl housing.

**TOUGH TRUCK CHASSIS—BRAWNY BASIS FOR BIGGER PROFITS.** Massive, truck-built frames add stamina to every chassis. In medium- and heavy-duty models, rugged self-adjusting variable-rate rear springs help smooth out big-tonnage hauls. Quality features galore boost truck life: Extra-big brakes give faster, surer stops and last longer. Precision wheel balance makes steering easier, lengthens tire life. Smooth, durable Synchromesh transmissions come in sizes to suit all types of duty.

**ENGINES WITH PROVED EARNING POWER.** Famous sixes that out-sell all others because they're best at brightening cost records . . . big V8's that lead the industry for short-stroke design and hard-working durability! Chevy for '61 offers a *long* line of power plants to meet the special needs of every weight class.

The truth is, we could fill every page in this magazine with reasons why Chevrolet trucks have never been better than they are for '61, but there's no need for that. Not when your Chevrolet dealer can boil it all down for you so quickly and pleasantly. See him soon and start saving soon! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.





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FRANK M. CHAPMAN: PUBLISHER

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### ADVERTISING OFFICES

New York (17), 100 E. 42nd St.  
Richard Duffy, Oxford 7-3400

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Los Angeles (57) 198 So. Alvarado St.  
Larry Jackson, DUnkirk 7-4337

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Editorial and advertising offices:  
198 So. Alvarado St., Los Angeles 57  
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## Choose your weapons!

WE LIKE CONTROVERSIES, and we think you do too. It's regrettable there aren't more that can be published in the magazine. Some of them can't very well be brought out in the open, because to do so would be too much like washing your soiled linen in the public square. More often, though, it's a case of people not wanting to be quoted. Some folks are not sure their position might be unassailable; for that reason, they'd prefer not to take sides in print.

You can't blame them. Crow is an unpalatable diet. If you never take a stand, you'll never have to eat it.

But, thank goodness, there *are* people who will stand up and be counted. Probably the outstanding one in our industry is that wonderful gadfly, C. F. Butterworth.

C. F. is the carburetion prophet in his home town of Mankato, Minn., as well as in the counties and states that border it. What he has done to promote LPG carburetion in his area is legendary. There are dozens of dealers—maybe hundreds—who will swear by him.

C. F. is a man with a mind of his own. Next to turning out a top-notch conversion job, and teaching others to do the same, there's nothing he'd rather do than argue. About carburetion.

Now there's a subject that, to an outsider, probably sounds pretty banal. How could a person possibly get worked up over such supposedly cut-and-dried subjects as power curves, pressures, compression ratios, and hot spots? This is engineering stuff, and surely all problems can be solved with graphs, curves, and slide rules.

Hah!

There can hardly be another subject under the sun that is touchier. Dealers, conversion experts, carburetor manufacturers, and engine-men all agree that LPG is a wonderful fuel. But when they start talking about conversions, debate

begins. And you can hardly find a debate that doesn't have C. F. right in the middle of it.

One of his favorite pastimes is to criticize the magazines that serve the field. No editor is safe from his barbs. When you see that familiar letterhead crossing the desk, your first reaction is to run for cover. But you always end up reading the letter, because C.F. always has something worthwhile to say. And sometimes he's even complimentary!

C.F.'s current target is an occasional series on carburetion fundamentals, which has been running in BPN off and on for several months. John Hallberg, the author, has suddenly found himself on the receiving end of C.F.'s barbs. But John, stout fellow that he is, has refused to flinch.

Currently, C.F. is taking issue with John's statements about whether a water manometer should be used when making conversions (see June 1960 BPN, pages 86, 87 "Convert Your Way to Profits"). He also thinks John should have cooled the manifold when he converted a fork lift (see July 1960 BPN, pages 93-99, "How to Convert a Fork Lift").

C.F.'s criticisms and John's replies are printed below. We think you'll find them both interesting and informative. ■

## BACK TALK

### Never a hot manifold!

Mankato, Minn.

We consider the manometer the No. 1 test unit in any gas appliance serviceman's kit. To us a gas-burning engine is simply another gas appliance. I believe we are as successful as we are because we consider this to be so.

Automotive makers, such as General Motors, are now having their dealers use manometers to check the new type air cleaners. When a farmer buys a John Deere corn drier, he gets a manometer



mounted in the compartment so he can check his pressures at all times.

The serviceman checking the gas refrigerator must set it to the tenths-of-an-inch. We are only concerned with reading in inches. If John can tell me how he knows whether a converter is at fault when an engine flattens out at 3500 rpm but does beautifully below that, I certainly want to learn how to do it.

In other words, I wonder how he determines the capacity of his regulators. I was taught that the flow through any orifice is the orifice opening times the pressure differential.

One thing in his article on forklift trucks does not make sense to me. That is converting one in three or four hours. That means that the manifold goes out hot, just as the pictures in the article indicated.

Personally, I think it is a crime to picture any engine using LPG as having a hot manifold. That is what the boys here call "hanging them on" and there is too much of that done around the country.

The manager for one of Del Monte's plants was in recently and told us about some of the forklifts we converted for them this spring.

The boys are crazy about them since the conversions. The lifts never had so much power. They get away from fumes and are quiet and smooth running.

The compression was raised and the manifolds were cooled in all cases . . . we've yet to turn out a job with a hot manifold.

C. F. BUTTERWORTH  
Acme Carburetion Inc.

*No one in the industry doubts the usefulness of a water manometer in the repairman's kit. If the man is proficient in the use of one and can test a secondary regulator with a breakaway pressure of .2- to .4-in. w.c., then, I say go ahead and use it.*

*I merely caution the newcomer to the carburetion field not to use one until he learns to use it well.*

*But remember, the object of these articles is to show the beginner how to make conversions profitably.*

*In the repair and test of converters, the water manometer should definitely be used.*

Referring to C.F.'s statement:

## "IN WILD ROSE, WISCONSIN"

# CORPORATE IMAGE

. . . means looking good to our customers — all the time . . . and it depends on keeping faith with them . . . delivering good, clean product when they need it, and at a price they can afford.

*"It's no problem to us, though, because Union Texas Natural is our exclusive supplier, and we can depend on them winter or summer, day or night — without fail."*



say Ray Jenks and Sons (Richard, left; James, right) Wild Rose, Wisconsin

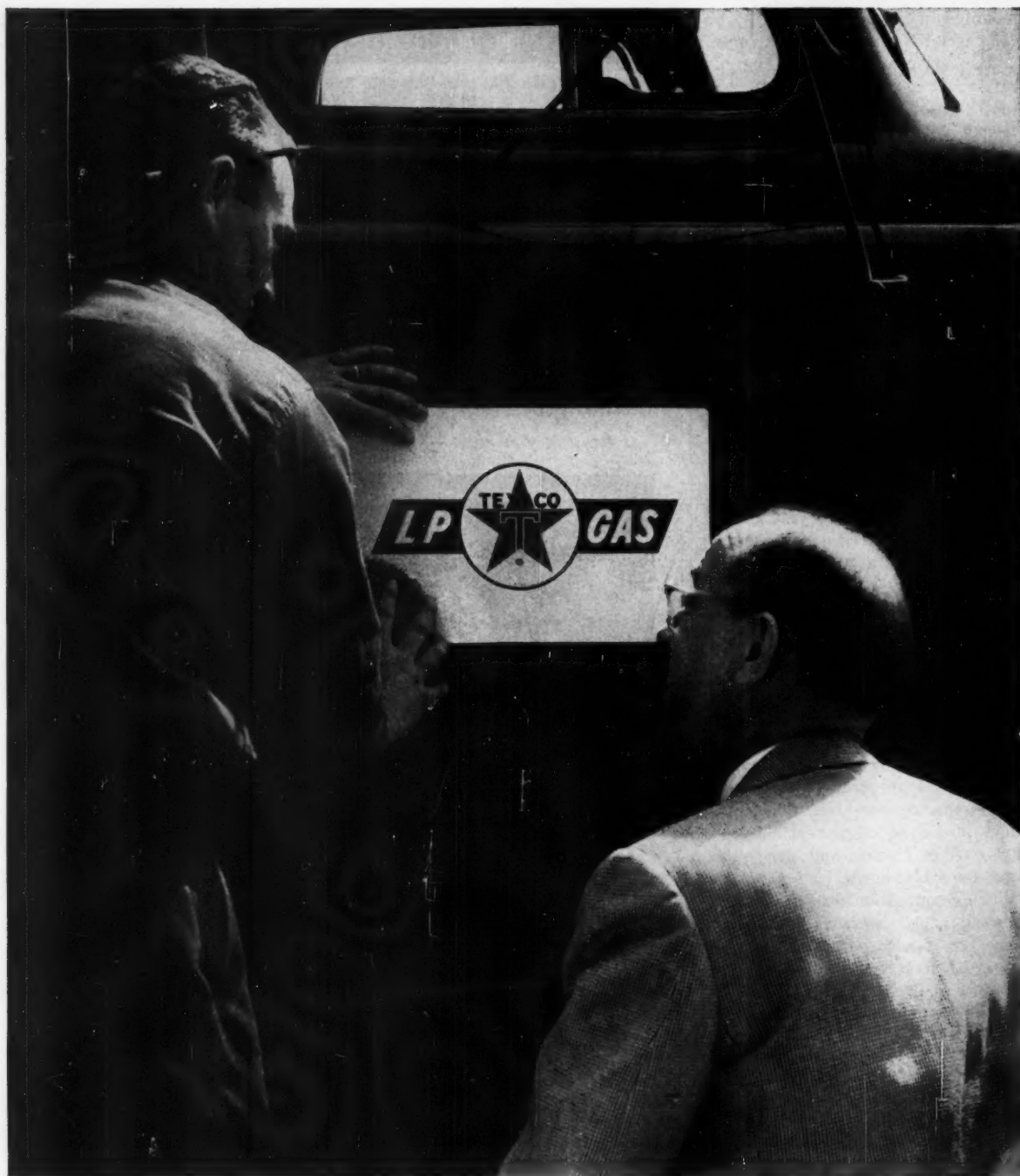
### CORPORATE IMAGE AT UNION TEXAS NATURAL REFLECTS

- an unlimited supply of quality products produced only in natural gasoline processing plants
- extensive delivery and storage facilities directed only at serving the needs of LP-gas dealers
- a marketing organization completely familiar with every problem of dealer operations
- a specialized engineering staff immediately available to any dealer . . . large or small
- the personal attention and sincere interest in individuals that is vital to dealer success

Like to know more about the advantages of dealing with Union Texas Natural? Call your nearest representative for complete details.



UNION TEXAS NATURAL GAS CORPORATION  
ENTERPRISE BUILDING TULSA OKLAHOMA



Want a promising future? Then team up with Texaco, the "jobber-minded" organization. More than 900 Distributors have been with us over 20 years; some over 45 years. If you are interested in the LP-Gas business, a new opportunity exists with one of the largest producers. Sell the best...sell **TEXACO**



## 5 reasons why it pays to be a Texaco LP-Gas Distributor

1. A product of highest quality—moisture-free.
2. Dependable and efficient delivery, in a new fleet of tank cars, from 31 strategically located production areas.
3. Immediate acceptance. Texaco LP-Gas is sold under the nationally famous trademark, the Texaco red star with the green "T."
4. One of the largest producers of LP-Gas, Texaco is the only petroleum company to build up successful distribution of its products nationwide.
5. Profitable and proved sales policies. Texaco does not compete with its independent distributors of LP-Gas.

TEAM YOUR NAME with Texaco and profit. Let us tell you about the opportunities for a promising and profitable business with Texaco LP-Gas. Send coupon today: Texaco Inc., LPG Sales Division, P. O. Box 2420, Philtower Bldg., Tulsa, Okla.; 3350 Wilshire Blvd., Los Angeles, Cal.; Texex, 237 Seventh Ave., West, Calgary, Alberta, Canada.



I would like complete information about the possibility of becoming a Texaco LP-Gas Distributor

NAME \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_

\_\_\_\_\_

NOVEMBER, 1960

## Back Talk

"We are not concerned with reading to tenths-of-an-inch of water column." We are, in fact, reading that close. If the converter has a breakaway pressure of .0 in. w.c., .2 in. w.c. on the high side will cause hard starting. The same amount on the low side will cause erratic running and possible blow-through from the primary regulator.

Where tank pressures are high, the trouble is further aggravated and the breakaway pressure becomes more critical. Thus, it is far safer to acquire an exchange unit if the converter is faulty—especially for the beginner.

In reply to the question of raising the compression ratio, cooling the intake manifold, etc. It is an accepted fact that cooling the intake manifold, raising the compression ratio, and changing the spark curve is beneficial to an engine using LPG. But most of the distributors of fork-lifts in this area figure that the benefits afforded by doing so are offset by the added cost.

Nevertheless, I have yet to hear one complaint of "lack of power" on a fork-lift conversion. I doubt if many operators notice any increase or decrease in power because the engine is driving a hydraulic system. Sheer power is secondary to smooth operation, an easy start and a good idle.

JOHN E. HALLBERG

## Unjust Federal competition

Gadsden, Ala.

I read with interest your comments about the Democratic party's agriculture and natural resources planks. (September BPN, page 23).

Since we live in a bordering TVA area, we are very interested in the unfair assistance given through low interest rates.

We would like to know what the Republican party platform is in regard to this same issue.

GEORGE A. SMITH  
Coosa Gas Co.

*The Republican party's platform more or less skirts the issue. Here are a few quotes taken from it:*

*Under "Economic Growth and Business": "Spurring the economy . . . by keeping the Federal Govern-*

*ment from unjustly competing with private enterprise upon which Americans mainly depend for their livelihood." Further on in this same section: "Discharge by government of responsibility for those activities which the private sector cannot do or cannot so well do, such as constructive Federal-Local action to aid areas of chronic high unemployment, a sensible farm policy, development and wise use of natural resources. . . ."*

*Under "Agriculture": "Encouragement of farmer-owned-and-operated cooperatives including rural electric and telephone facilities."*

*Under "Natural Resources": "We pledge . . . to observe the 'preference clause' in marketing Federal power."*

As you can see, I have included some quotes that do not directly have to do with the REA or the TVA; however, they might be interpreted to show the party's thinking on matters related to the public power issue. Actually, as you can see also, there are only two statements that would seem to directly bear upon the matter—the encouragement of cooperatives and the observance of the preference clause.

Neither of these expresses opposition to the REA or the TVA. On the other hand, they don't appear to unqualifiedly support them either. I imagine the best indication you would have as to the Republican party's stand on the issue would be the administration's record. It has continually made every possible effort to have the interest rate increased. In fact, President Eisenhower made the suggestion that perhaps the time had come for REA's to seek their own method of financing, in the money markets, even as you and I must. This recommendation was looked upon as pure heresy. It made him, in the eyes of the liberals, an enemy of progress.—Ed.

## Teamsters seek LPG data

Washington 1, D. C.

I should greatly appreciate receiving the 2nd Annual Market Report on the Liquefied Petroleum Gas Industry.

ABRAHAM WEISS  
Economist

Office of James R. Hoffa  
International Brotherhood  
of Teamsters

# POWELL

## WORLD'S LARGEST FAMILY OF VALVES

**performance makes the world of difference**

### Powell LPG Valves for Butane and Propane Gases

Powell LPG valves are expertly designed and engineered to safely handle liquid or gaseous butane, propane, and other hydrocarbons. Available in bronze—globes, angles, gates, checks; and in steel—globes, angles, checks . . . for 400 pounds W.O.G.

Trim and internal working parts are easily and quickly

renewable. Valves can be re-packed under pressure when wide open. All are listed by Underwriters' Laboratories, Inc.

One quick call to your local Powell distributor can fill all your valve needs. Or write to us . . . a leader in the valve industry for 114 years!

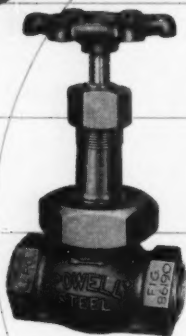


Fig. 86190—Steel LPG globe valve. Union bonnet; special composition disc; renewable screwed-in nickel-bronze seat ring.



Fig. 8151—Bronze LPG angle valve. Renewable, special composition disc, integral seat. Also available with screwed-in nickel-bronze ring—Fig. 8103.



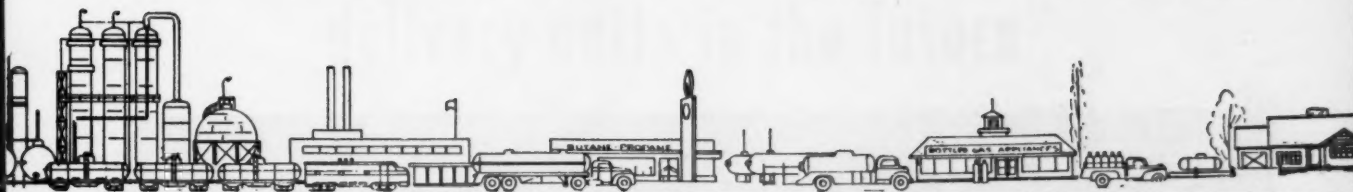
Fig. 86196—Steel LPG horizontal lift check valve. Screwed-on cap. Stainless steel/spring, guided disc holder, renewable screwed-in nickel-bronze seat ring.

THE WM. POWELL COMPANY • DEPENDABLE VALVES SINCE 1846 • CINCINNATI 22, OHIO



# HIGHLIGHTS

BPN



The gas industries "will do more business and add more new operating facilities in the current Space Decade than in the entire previous century." That prediction was made by outgoing president Wister H. Ligon at the annual AGA convention (Atlantic City, early October). Fuel and gas equipment sales for the decade should top \$128 billion, 5.5 per cent more than for the previous century and nearly three times the record-breaking total for the previous decade. Incoming president Lester T. Potter, president of Lone Star Gas Co., Dallas, said that customers should increase 34 per cent during the decade, meaning 43.7 million natural gas customers and 12 million LPG customers by the end of '69. See page 27 for BPN's special coverage on the convention's Festival of Flame.

Meeting at the same time and place, the LP Gas Association of New England re-elected its top officers for another year. Included are President Alfred Thomas and Vice Presidents Henry Merrill and Sterling Nelson.

Speaking of the space decade, a recent jet-fuels symposium concluded that liquefied propane and methane may be used to fuel future jets and solve the ever-increasing heat dissipation problem, absorbing heat from both the engines and external surfaces of the plane.

LPG pipelines continue to be big industry news. In late September, Transcontinental Gas Pipe Line Corp., a natural gas transmission company, announced it would build a \$63-million, 1080-mile LPG pipeline. After the article on page 45 was set in type, the company announced that the new LPG transmission subsidiary, Trans-Southern Pipeline Corp., would be headed by the mother company's officers, including President E. Clyde McGraw. . . . Meanwhile, construction was proceeding on schedule on the Mid-America Pipeline, to be in operation Dec. 1.

First repercussions from the Mid-America line have already passed through the initial-hearing stage. Twenty-one trucking companies are scrapping for certificates to haul LPG from various terminals along the line. The ICC held eight days of hearings (Minneapolis, early October), will probably hold more early next year after all parties have filed summary briefs. Indications are that a decision won't be made until May or June. . . . A couple weeks earlier, ICC turned down a request for a 10-cent-per-barrel rate cut sought by railroads serving the area to be served by Mid-America. Requested by Texas-New Mexico Railway and Texas-Pacific Railroad, the reductions will automatically go into effect in seven months, unless the ICC (now investigating) approves a cut sooner.

Giant transport tanks also continue to be big news. Tuloma Gas Products Co. and Cherokee Steel in early October announced "the largest single tandem transport ever constructed." It carries "11,287 gal. of gas." (See page 44.) Shortly thereafter, Delta Tank Mfg. Co. announced "the largest LPG transport trailer believed to be in operation in the U. S." It has a capacity of 11,550 wg and an 87-per-cent-full payload of 10,848 gal. of LPG. Shortly before, Bethlehem Steel Co. announced it had built "the largest tanks ever employed for the transportation of LPG." Three of these 14-ft-diameter, 163-ft-long 182,000-wg giants were placed in each of three new barges delivered recently.

*Continued on next page*

Continued

# HIGHLIGHTS

Discovery of a \$100,000 butane theft may be only the beginning of a wide-scale Gulf Coast LPG theft ring. That was the opinion of Wanda Petroleum Co. President T. C. Morrow after two of his firm's drivers admitted stealing 1.7 million gal. of butane over a three-month period. The drivers faked unloading their entire load, peddled the balance to LPG dealers at ½ cent to 1½ cents below market price.

Gas appliance sales are showing an up-turn, holding up better than construction. August range and heating equipment shipments both jumped approximately 35 per cent over July figures. At the AGA convention in mid-October, GAMA President Wendell C. Davis noted that while 1960 housing starts were down 13 per cent, gas heating equipment was down ten per cent; ranges, nine per cent; water heaters, seven per cent.

New Appliances—Maytag announced in early October that it had begun producing its first gas washer-dryer. . . . Sears, Roebuck and Co. held a press preview in mid-October for its first gas refrigerator. . . . Whirlpool Corp., after \$1 million of research, unveiled the Blanket-0-Flame range with its many innovations—at the AGA convention, announced an LPG model would be in production in '61.

Marketer News—National Propane Corp. (Garden City, L. I., N. Y.) reports revenues for the 12 months ending July 31 increased 5 per cent to \$18.69 million, earnings increased 9.6 per cent to \$642,000. . . . Petrolane Gas Service Inc. (Long Beach, Calif.) voted a 2-for-1 stock split, estimates earnings for the 12 months ending Sept. 30 will be up 45 per cent. . . . Suburban Propane Gas Corp. (Whippany, N. J.) President Mark Anton recently told the New York Society of Security Analysts that his company planned to purchase a "medium size" gas range manufacturer and a natural gasoline plant. . . . United Petroleum Gas Co. (Minneapolis) recently purchased Merritt Gas Co. of Morton, Tex. . . . Uregas Companies (Rolla, Mo.) bought the propane business of Hauck Oil Co. (Dixon, Mo.)



## CURRENT L. P. GAS & L. R. GAS PRODUCTION & INVENTORIES

(A. P. I. figures - in thousands of gallons)

	Propane	Butane	Bu-Pro Mix	Iso- Butane	Other Mixes	Total LPG	Total LRG
<b>Production (U. S.)</b>							
Sept. '60.....	328,381	152,985	49,225	59,932	74,205	657,728	260,688
Sept. '59.....	279,359	156,076	48,820	53,050	72,310	609,615	234,524
'60 to date....	3,069,867	1,565,438	492,716	511,754	623,345	6,256,120	2,408,218
'59 same period	2,683,928	1,501,520	539,428	466,886	555,306	5,746,978	2,075,171
<b>Inventories (9-30-60)</b>							
Zone A.....	20,747	2,505	12	—	10	23,274	14,988
Zone B.....	61,084	5,252	—	1,157	963	68,456	25,836
Zone C.....	81,125	37,629	1,910	3,652	—	124,316	7,477
Zone D.....	127,736	13,210	19,257	829	250	161,282	691
Zone E.....	133,039	212,731	1,230	20,906	10,182	378,088	58,955
Zone F.....	293,227	103,777	993	1,572	74	399,643	3,311
Zone G.....	3,363	727	8,878	—	10	12,978	912
Zone H.....	942	402	98	94	15	1,551	32,754
U. S. ....	721,263	376,233	32,378	28,210	11,504	1,169,588	144,924
U. S. (9-30-59)	749,455	248,774	32,266	48,070	17,320	1,095,885	128,557

*E. W. Arnold, who's from Missouri, says...*

**"We'll buy only Mississippi Tank delivery units in the future"**



"I'm from Missouri . . . you've got to show me"—is a well-known phrase that points up the fact that Missourians are careful buyers. E. W. Arnold, manager of Home Gas Service, Inc., Kahoka, Mo., is no exception. Last year, when expanded business required that the company buy a new delivery, Mr. Arnold examined the features of available units and then selected a Mississippi Tank Titan, Jr.

After a full season's experience with the unit,

here's what Mr. Arnold has to say: "Our Mississippi Tank Titan, Jr. is superior to any unit we have ever owned. Its light weight allows us to carry a larger payload and its high pumping capacity—better than 50 gallons per minute into domestic systems—enables us to handle increased business with less manpower and equipment."

And to prove that he means it, Mr. Arnold adds, "When we get ready to buy a new delivery, it will be a Mississippi Tank unit!"

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# WASHINGTON REPORT

by NEIL REGEIMBAL, *Washington Editor*



## ★ Electric bills hit new high

The average cost of electricity to the consumer is continuing the upward trend which started in 1951. In its annual survey of electric costs, the Federal Power Commission reports that the average residential cost per kilowatt hour is now 2.98 cents, up from 2.94 a year ago and 2.78 in 1951. Average residential electric bills, based on 250 kwh, now are \$7.44, compared with \$7.36 a year ago and \$6.95 in 1951. Lowest electric bills are still found in the Tennessee Valley Authority service area, and the highest in the upper Midwestern states.

## ★ When sales top \$500,000, you're under NLRB jurisdiction

Wholesale and retail L. P. gas firms are subject to National Labor Relations Board jurisdiction in dealing with labor unions if their gross volume exceeds \$500,000 a year. NLRB in a recent case turned down an Indiana Bottled Gas Co. plea that it was exempt from jurisdiction and ordered the firm's employees to vote on whether they want to be represented by District 50 of the United Mine Workers, which was seeking to organize them. Indiana Bottled Gas, NLRB noted, has three bulk plants in Indiana and sells in 13 cities in Indiana and two in Illinois. Workers to vote include all servicemen, gas delivery men, spray painters, transport drivers, and sales representatives, including regular part-time workers, but not office clerical employees, a branch manager, or supervisors.

## ★ Well-heeled REA's snap up \$5 billion in bonds

The country will soon have some idea of the size of the cash reserves REA co-ops have been able to build up as the fruits of subsidy government loans. In the six weeks after they went on sale, REA co-ops (both electric and telephone) purchased \$5.1 billion worth of special two per cent government bonds. The bonds are sold only to REA co-ops. The two per cent interest on them, about half of what the government is paying in the commercial money markets, matches the two per cent rate the government charges on loans it makes to the co-ops.

## ★ Rail unions' truck "safety" rules turned down

A request by rail unions for a special probe of the need for new rules to prevent grade crossing accidents between trains and petroleum tank trucks has been turned down by the Interstate Commerce Commission. The commission said the unions failed to show that any special new rules are necessary.

## ★ Farmers' assets at new high

Although their cash position is not too good, farmers are increasingly better off. Total value of all U. S. farm assets is at an all-time high—\$203.6 billion, the Federal Reserve Board reports. Farm debts continue to be a small part of farm assets. Debts amount to \$24.3 billion, only 12 per cent of assets, and farm real estate rose in value by \$4 billion last year to \$129.1 billion. Farm machinery and motor vehicles increased by about \$700 million last year, to a value of \$18.4 billion.

## ★ Watch out for freight rate boosts

Another round of higher freight rates is almost a certainty. Both rail and truck boosts are being proposed. Railroads propose to raise shipping costs by about one per cent by increasing a wide variety of charges by specific dollar amounts. Higher rates were set to go into effect Oct. 24. Southern and Midwestern truckers are seeking a five per cent freight rate boost on inter-territorial traffic.





*your most precious right...use it!*

On November 8th, 1960, *you* will elect a new President of these United States. *You* will also elect men with power to write the laws that affect your way of life...and the lives of over 170 million of your fellow citizens.

As an American citizen, *you* will have a choice. *You* will elect the government in a *free* election.

Only the foolhardy and shortsighted would take such a privilege for granted. It's not a question of *should* you vote—but rather of making sure that you exercise this most precious of all rights in these most critical of all times.

Study the issues, consider the candidates—exercise your right—*vote* November 8th.

*The* **BASTIAN-BLESSING** *Company*

# World's Largest LPG Pipe

**WILLIAMS BROTHERS COMPANY SPECIFY NEW BLOWOUT-PROOF GASKETS AS FLANGE SEAL FOR MID AMERICA'S 2,200 MILE PIPE LINE.**

Engineers for Mid America Pipe Line Company, had to have a flange seal to meet some of the toughest specifications in pipe line construction. They wanted the best. They wanted a gasket with maximum effectiveness, (leakage rate equivalent to welding!) easy installation, long service life, and low maintenance cost.

After exhaustive tests and investigation they chose Gask-O-Seals. Said Williams Brothers engineers, "Primarily we had to have a seal that was blow-out proof. The controlled confinement principle used in Gask-O-Seals proved exactly what we wanted."

Several thousands of these amazing gaskets seal main line and subsidiary equipment on this 2,200 mile high pressure system — the longest and largest LPG line ever built. It runs from New Mexico and Texas, to Minnesota and Wisconsin. The line and its complexes will serve millions of customers providing low cost and better service with Propane, Butane and natural gasoline.

## Re-Usable Gask-O-Seals Cut Maintenance Cost

When it's necessary to tear down a flange with a Gask-O-Seal in it the ease with which bolts are "broken" and nuts unscrewed is a revelation to men used to "cracking" flanges with ordinary gaskets. The reason is simple, you simply don't have to tighten bolts as tight with Gask-O-Seals . . . in fact, on construction sites for Mid-America's pipe line you never saw a "cheater!"

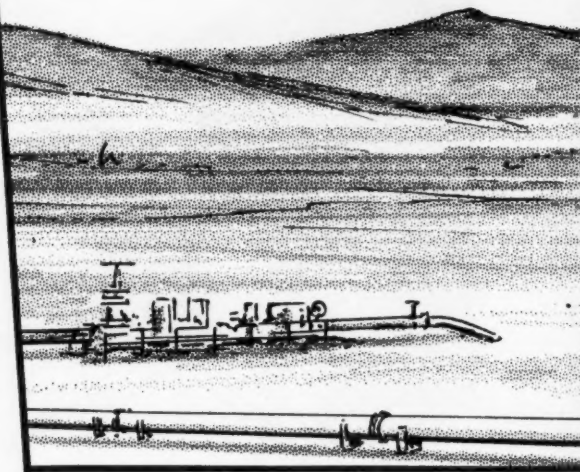
Even more amazing to pipe fitters is the fact that flange faces don't have to be cleaned and that the same gasket can actually be reinstalled!

The reduced maintenance cost mounts up to a really big saving when Gask-O-Seals are specified, whether in a pipe line, refinery, processing plant, or industrial plant.

## BUYERS FIND GASK-O-SEALS EASY TO ORDER—PRAISE DISTRIBUTION METHOD

Industrial buyers find that Gask-O-Seals are readily available and easy to order with a simplified "call out" system, tying into standard ASA flange sizes and specifications.

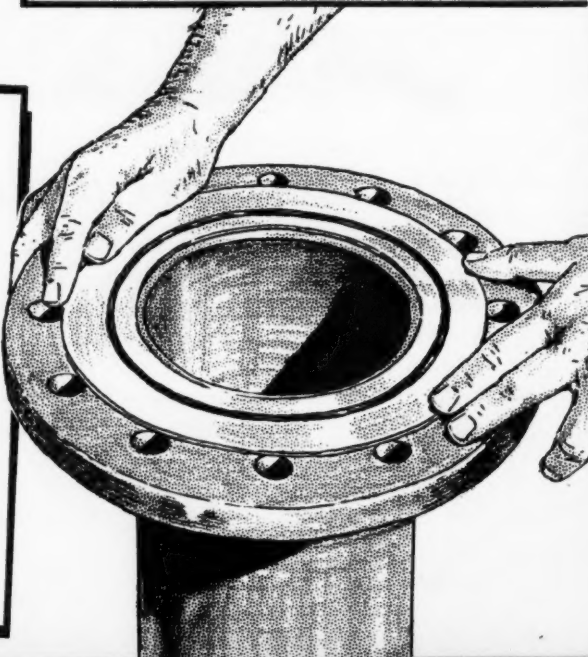
In addition buyers preferring local sources usually find a Parker Seal Company stocking distributor close by. More and more distributors are requesting franchises as preference for Gask-O-Seals grows. "Many of these distributors are recommended to us by purchasing men as well as engineers," says Mr. T. J. McCustion, Vice-president in charge of sales at Parker. "Such recommendations are very much appreciated. The company will gladly consider the request of any qualified distributor for a franchise on this new product line."



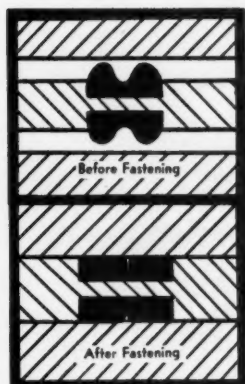
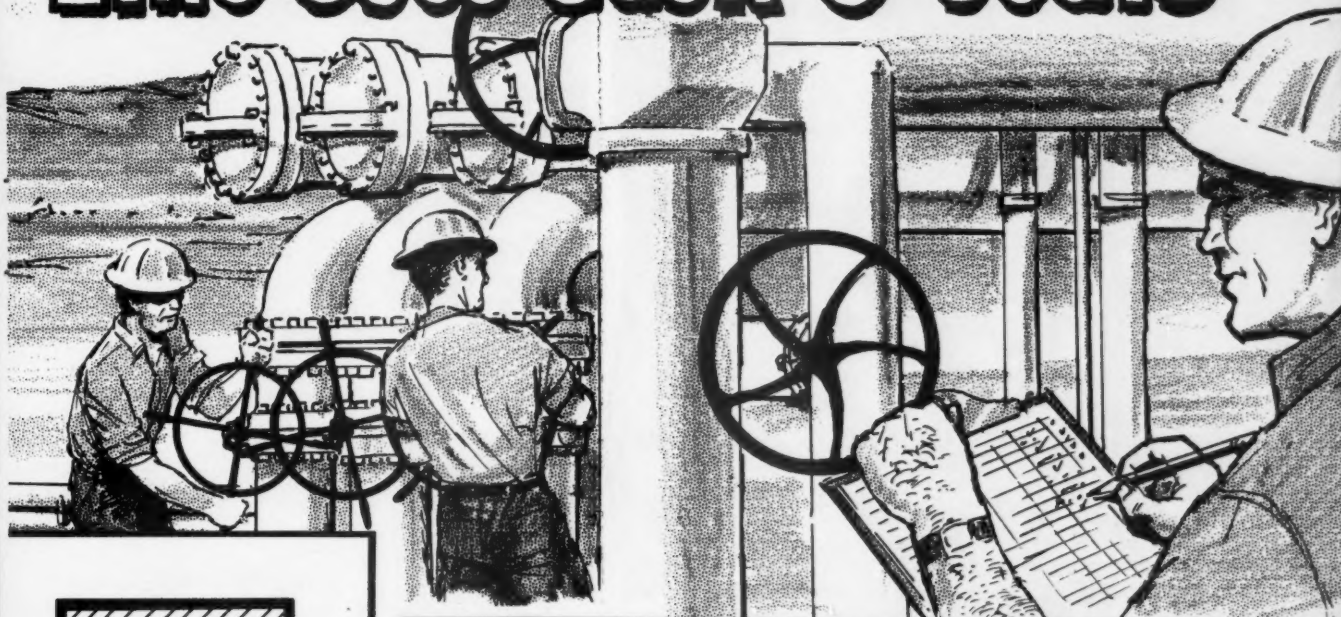
## WHY GASK-O-SEALS ARE SO EFFECTIVE—

Gask-O-Seals are effective because of the sealing principle involved . . . controlled confinement. That means that the "rubber" mass to groove void is carefully controlled. The gland is totally confined with metal-to-metal contact of faying surfaces. The whole seal is designed and manufactured to carefully controlled tolerances. The Gask-O-Seal design allows very, very little area of attack on the seal itself by the materials being sealed.

Of course, there are many other features about the Gask-O-Seal that makes it unique as an effective, safe, sure seal. Some of them quite technical, others just common-sense reasons. The fact that they are used in so many vital apparatuses attests to their superior sealing effectiveness.



# Line Uses Gask-O-Seals



**Underwriter's Lab Tests Gask-O-Seals, Approve For Listing**



To be sure that customers could have confidence in the competitive safety of Gask-O-Seals, Parker Seal Company submitted all of standard ASA flange series seals to Underwriter's Laboratories for testing. They have approved all four of the series 6400, 6420, 6430, and 6440 for listing under their re-examination code, and granted permission to use their insignia for the services covered.

## HOW TO SAVE 19 MINUTES EVERY TIME YOU "BREAK" A FLANGE!

A testing foreman on Mid-America's pipe line saw Williams Brothers men installing Gask-O-Seals in flanges at the Conway, Kansas, Terminal. He turned to the Parker Seal Co. representative standing nearby and said:

"Man, go see my boss about those gaskets. I'm saving hours and plenty of money with them. We can just put 'em in for a test, break up and move, and re-use the same gasket, over and over again!"

A maintenance foreman said Gask-O-Seals may save them "2 days time of two 4 man crews-with trucks, wrenches and other equipment."

A survey shows it takes an average of 36 minutes to remove and install an ordinary gasket after several months use. With Gask-O-Seal it takes only 17 minutes! Here's how it breaks down:

3 minutes saved in "breaking" nuts, 3 minutes saved in parting flanges to necessary working space, 13 minutes in not having to clean and scrape flange faces — and you can install the same Gask-O-Seals you take out!

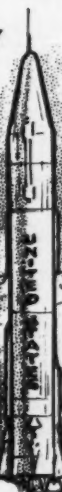
A worthwhile saving?

## OVER 1,000,000 GASK-O-SEALS USED UNDER THE VERY TOUGHEST CONDITIONS BY AIRCRAFT AND MISSILES.

The sealing effectiveness and high safety factor of Gask-O-Seals were first recognized by the aircraft and missile makers to whom, safety, and genuine effectiveness of a seal is paramount.

Hundreds of tests have been run on Gask-O-Seals under some of the most rugged functional and environmental specifications a seal can undergo.

Today, Gask-O-Seals—much the same as the ones used on Mid America's new pipe line—are in use on practically every military and commercial aircraft. A Gask-O-Seal, for instance, seals the escape hatch and other openings of the Mercury capsule on the "man-in-space" project.



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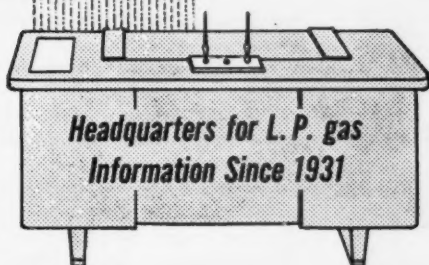
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# Information Desk



*Answers to many of the problems relative to operating an LPG business ... Studies have been made on diesels using LPG for fuel.*

## Questions and answers on LPG operations

*New Mexico  
H. B. C.*

Please supply information on the questions listed below.

1) Why, in the fabrication of LPG cylinders, are they heat treated and how?

L. P. gas cylinders are heat treated to relieve stresses set up in the steel when it is formed and welded. They are put through a furnace where they are heated to about 1500 deg. F. The temperature is determined by the quality of the steel.

2) What are the most frequent causes of malfunction of low pressure regulators?

Some causes of malfunctions in low pressure regulators are:

(a) Water in the LPG which causes ice to form in the regulator valve inlet during periods of freezing or near freezing temperatures. (Do not confuse this with frost which may form on the outside.) Only if there is water in the fuel will a regulator freeze. Also, due to the expansion of the gas, freezing can occur if there is water in the fuel even though the outside temperature is above freezing.

(b) A clogged vent in the regulator diaphragm cover housing due to wasps building nests, children filling with dirt or other stoppages.

(c) Rain, ice or snow may also enter the vent and cause erratic pressure.

(d) Dirt in the inlet lines may lodge under the seat of the regulator valve and prevent it from closing tightly when the flow is reduced to no flow or to a pilot flow.

(e) Improper sizing of regulators.

3) What is the procedure of formula to calculate the "efficiency loss" of L. P. gas above sea level up to 10,000 ft?

I am not sure I understand the question in this case. I believe the "efficiency loss" referred to is the derating of the appliance because of altitude, and is as follows:

"Input ratings of gas appliances are based on sea level operation and need not be changed for operation up to 2000 ft elevation. For operation at elevations above 2000 ft, input ratings should be reduced at the rate of four per cent for each 1000 ft above sea level."



This does not mean that the area of the burner orifice is decreased four per cent for each 1000 ft of altitude. The gas expands, also, due to the altitude and automatically derates the orifice some. The manufacturers recommendation should be used for orifice size at the elevation where the appliance is installed.

The reason for derating or reduction is brought about by the expansion of air and products of combustion at the high altitudes. This reduces the amount of oxygen available for combustion and produces a larger volume of products per unit of heat released.

4) What is the formula or procedure to figure the exact weight of a mix at a given temperature (without tables)?

It is assumed that the weight of each component of the mixture will

be available at the temperature to be considered. It should not be expected that anyone would remember the weights at the many temperatures involved—or any temperature for that matter. That is why handbooks are written.

Let X, Y, Z, etc., represent the fraction of volume of each component in the mixture, and W<sub>1</sub>, W<sub>2</sub>, W<sub>3</sub>, etc., the weight per unit volume of each fraction, respectively. The weight per unit volume will be:

$XW_1 + YW_2 + YW_3 + \text{etc.} =$   
weight of the mixture per unit volume.

5) How do you calculate the diameter of a pipe needed for a domestic installation, knowing the maximum cubic feet per hour used and the length of piping necessary, without allowing for pressure drop of the various fittings (without tables)?

There are several reliable formulae for calculating the flow of gas in pipes at both low and high pressure. These are the Spitzglass, Fritzsche and Pole formulae for pressures under one lb. Pole's formula is simple and reliable.

$$Q = 876 \sqrt{\frac{d^5 h}{g l}}$$

where Q = flow per hour in cubic feet of gas at 60 deg. F.

d = inside diameter of pipe inches

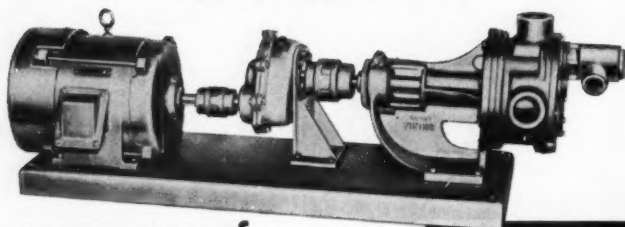
h = pressure drop

g = specific gravity (air = 1)

l = length of main in feet

6) What dangers are there in an excessive pressure drop to an ap-

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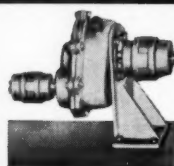


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## Information Desk

pliance from the cylinder regulator due to under size piping?

Some reasons are:

(a) Poor adjustment of burners for efficient operation because they will operate at different pressures depending on the load. AGA appliances are tested to operate at 10- to 11-in. w.c. pressure.

(b) The burners will not deliver at their rated capacity.

(c) Low pressure may cause the safety pilot to burn low and cause the safety shut-off to close.

(d) If one or more appliances turn on at about the same time, the low pressure might cause failure of the pilot to ignite. Or, if very severe drops are encountered, it could cause extinction of a turned-down top or oven burner that would not re-ignite from a pilot. The danger is greatest on top burners or oven burners not protected with 100 per cent safety shut-off.

7) Is it possible to calculate the contents (volume) of a storage tank when the float gauge is inoperative, and only the 10 per cent valve is left to use?

Not accurately. An estimate can be made by feeling for the level by difference in temperature between liquid and vapor space level.—Ed.

## Adding LPG to diesels has questionable value

Oregon

Would you please send me any information that you have on propane injection for diesel engines, or tell me where I can get this information.

J. J. D.

We do not have any information at the present time on propane injection for diesel engines.

There has been some work done on the addition of L.P. gas to diesel engines under heavy load through the air inlet. Although there have been claims of increased power and reduction in smoke, other studies have shown little advantage and the possibility that it might cause some trouble or damage to the engine.

The Ellis Manifold Corp., Los Angeles, has developed equipment for adding L.P. gas vapors to the air intake on diesel engines. They will be glad to send you information on it and the results of tests which they have made.—Ed.

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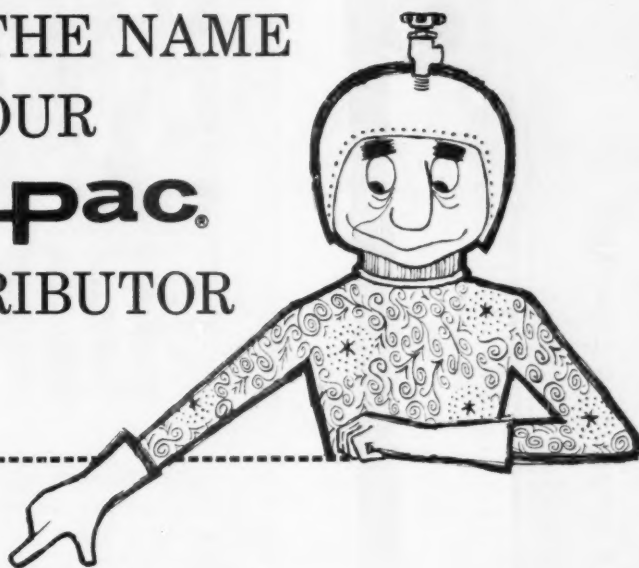
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# STILL EXPAN DING

Sixty feet long — 11,267-gallon water capacity. And it's Tuloma's! This super-sized truck is the latest addition to our "jumboized" transportation fleet.

Many new maintenance and safety features make their debut on this huge truck, which is claimed by its manufacturers to be the largest single tandem transport ever constructed. One of the most important features is a 3-inch capacity, 300-gallon-per-minute pump designed especially for this unit. Cuts unloading time to about 35 minutes!

This large, modern, efficient truck and a sister unit will serve the Western states from Tuloma's Salt Lake City, Utah, truck terminal.

Another excellent example of Tuloma's nationwide expansion — another excellent reason why you should — TAKE TULOMA . . . AND GROW!



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**TULOMA GAS PRODUCTS COMPANY**

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Tuloma, Oklahoma





# Beyond the Mains

By WILLIAM W. CLARK • Editor



## Progress report from Florida

THE EVIDENCE THAT NATURAL GAS IS NOT having things all its own way in the Florida market continues to mount.

After the manner of the BPN survey of the Florida situation (September 1960, pages 29-31), the *Miami News* recently conducted a survey of its own among LPG dealers and came forth with conclusions which closely paralleled ours.

"Instead of losing customers," say the *News* story, "most have gained from 1 to 10 per cent more business.

"After a year of operation in which natural gas companies have been beset with one problem after another, bottled gas companies regard the opposition as 'just another competitor.'"

The competition has two faces—private enterprise and municipal ownership. Both are having their troubles.

The problems of private enterprise stem primarily from the companies' own propaganda machine. So deeply had they impressed consumers with the thought that natural gas would be cheap that they are meeting opposition over even the most minor rate matters. For example, when Houston Gas Corp. raised its minimum from \$1 per month to \$2, it was greeted with howls of anguish. Yet even at \$2, it still can't break even.

Houston also recently got hit with a retroactive franchise tax. Three per cent of this (or half) will be passed along to customers, and they will also have to cough up \$89,000 to help pay off the retroactive levies. This will be spread out over a five-year period. The cost per customer for this feature is \$5. Between the current and the retroactive taxes, customers whose bills average \$5 a month will pay an extra 23 cents.

Hardly seems worth getting excited about, but at this point the important thing seems to be the principle, not the money.

Meanwhile, up in Fort Pierce, a proposed municipal system is running into opposition. Harken to what Earl Kicliter, an LPG dealer, says: "I am opposed to the plan more as a taxpayer than as an L.P. gas dealer. I think it is an unsound business proposition."

The city commission voted to offer revenue bonds for the system, which will cost \$1,375,000. "If the city is able to sell these bonds, they will carry an interest rate of at least five per cent, perhaps six. That means an annual interest payment of around \$70,000.

"When the city was considering the matter, it offered natural gas to residents—anywhere in the city—for a charge of \$5 for converting existing equipment and piping gas in. Only 2000 persons expressed interest (but did not commit themselves). Since this was an attractive offer, I think the 2000 figure represents just about the maximum potential customers for the immediate future.

"The average bill, it is estimated, would average around \$6 a month. This would mean a total annual income to the city of about \$145,000. Out of this must come the \$70,000, leaving \$75,000 or less for everything else. I don't see how the city expects to operate a gas system on that kind of money, much less think about retiring bonds.

"I can see some merit in a limited distribution system, where natural gas would be distributed only in built-up parts of the city. Here the investment and the return would be in better proportion, and later the system might be extended, if justified.

"Frankly, I feel the issue will settle itself when the city learns that it can find no buyers for the bonds under this proposition." ■

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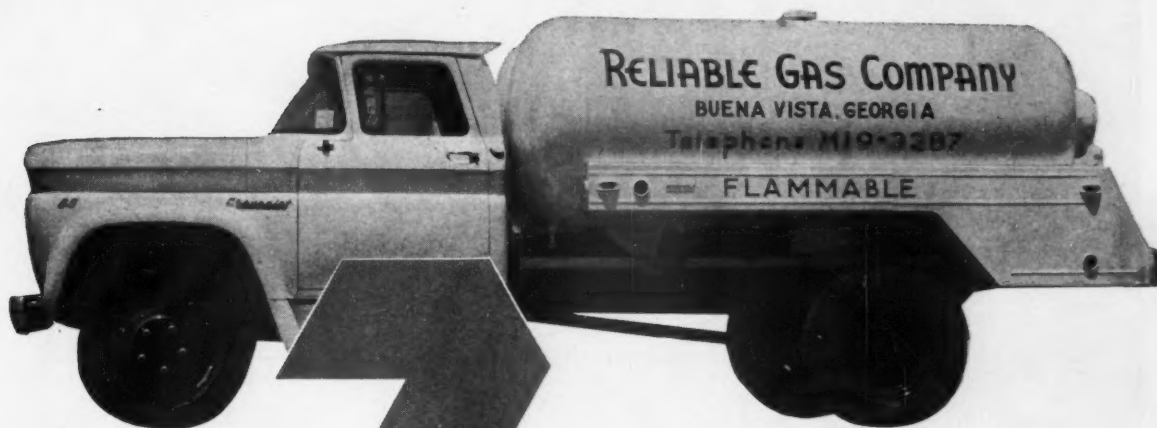
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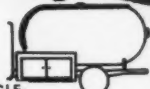
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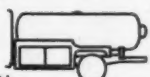
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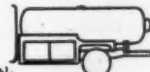
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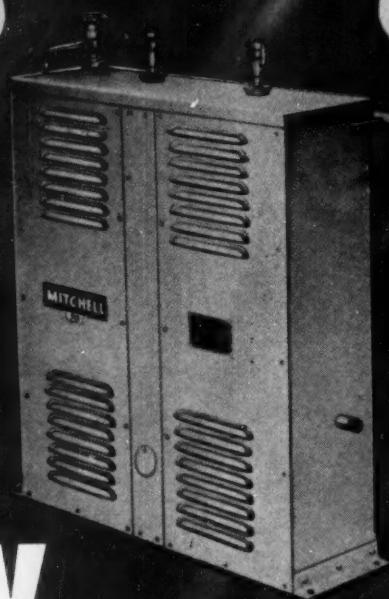
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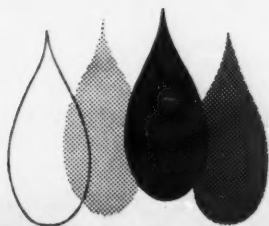
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# STEADY PRESSURE

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*BPN reports on the festival of Flame*



## Atlantic City show unveils the promise of the future

LAST MONTH, LPG DEALERS IN THE NORTHEAST shared with gas utility men a view of the latest advances in appliances and equipment, and a preview of what the future holds. The event was the "Festival of Flame," a giant (90,000 sq ft) exhibit arranged by the AGA for its Atlantic City Convention. By special arrangement, the Northeast LPG Convention was held simultaneously, and an afternoon was set aside for delegates to tour the booths.

The Festival of Flame is unique in gas industry shows. Exhibits are carefully screened, and only those devices that meet the AGA's tests of "newness" can qualify for showing.

The affair appealed to a broad range of interests, literally covering the whole gas field "from wellhead to burner tip." Included were a full-scale well-drilling rig and a simulated gas dispatching network.

Of particular interest to the LPG men was the Gas Utilization Section. Here was included one representative model of each significant new technical development in residential, industrial, and commercial gas appliances and equipment that satisfied one of the following qualifications:

- 1) Has become commercially available since the last AGA exhibition, held in October 1958.
- 2) Has advanced from the prototype stage to production in that time.
- 3) Has entered the prototype or field test stage in that time.

BPN's editors visited the show. On the following pages, we present a view and a preview of the utilization exhibits—of the exciting new appliances now on the market, and of the promising new ideas that will be embodied in the appliances you will be displaying on your sales floor tomorrow.



## BPN reports on the Festival of Flame



Empire's wall heating unit produces 70,000 Btu, has a sealed combustion unit and high vent.



Maytag's gas dryer automatically selects the right drying times and temperatures, needs no timer.

**T**OMORROW arrived last month in Atlantic City. New ideas were unveiled that promise to open up totally new horizons in gas utilization.

One of the brightest new ideas is thermoelectric generation. Minnesota Mining & Manufacturing Co. has developed a 10-watt generator that has numerous application possibilities.

Thermoelectricity itself is not new to the gas industry: it has been used for years in miniature metallic thermocouples to operate control valves. But efficiencies were too low (1/10th of 1 per cent) to make it practical for larger assignments. Now research has yielded types having 8 per cent efficiencies; tomorrow, they may reach 10 or even 20 per cent.

But 8 per cent is practical for producing all the

power requirements—including pumps and blowers—for forced air or hot water gas heating systems.

At the Festival of Flame, 3M showed a gas-fired wall heater embodying a thermoelectric generator. Company officials say central heating units using similar systems can readily be built.

The obvious advantage—uninterrupted heating during power failures—is only one of several, says 3M. The unit can be designed to provide emergency house power, also. Start-ups and shut-offs of circulation are gradual, eliminating noise and sudden drafts.

Today, many space and wall heaters are sold without fans to eliminate the expense of connecting the device to the home's electrical system. Thermoelectric generation would eliminate this problem.

A 40,000-Btu burner on the Vernois does three cooking jobs, and heats living space.

You can fry an egg on a paper plate over Blanket-O-Flame. The plate won't burn.

Built-in fan vent "guarantees" cooler oven doors and kitchen.





Highly sophisticated controls were also in evidence. White-Rodgers introduced three prototypes and a production model at Atlantic City.

The prototype "automatic pilot relight" system overcomes pilot outage problems to which sealed combustion units are susceptible. Wind and drafts at the coaxial vent, which extends through the wall, and atmospheric conditions causing a temporary build-up of combustion products sometimes snuff out the pilot.

The relight control incorporates a pilot-lighting glow coil and a pilot flame detector. Within 20 seconds after an outage occurs, the flame detector cools sufficiently to cause snap-action contacts to close, and a combination igniter transformer and warp switch are activated. The warp switch energizes a glow coil which relights the pilot.

The system also has a fail-safe feature: if the pilot fails to relight, the entire system, including gas flow, is shut down.

Another new control is the "time delay fan switch," which eliminates blower "short-cycling" on furnaces. This device is not dependent on any temperature sensing element, but is timed instead to the opening and closing of the gas valve. Fan operations will begin a minute or two after the gas valve opens, will halt within two to four minutes after it closes.

Increased heating efficiency is also claimed. After the burner cycle is completed, the remaining warm air in the furnace is forced into the heating system.

Short-cycling is most prevalent in compact furnaces—especially counterflow types—say W-R officials.

A third prototype is a new modulating valve and temperature cut-off control package for domestic gas dryers. The control first variably adjusts heat input to any given load, then closes down gas flow to the burner when the load is improperly dried.

The amount of moisture present modulates the valve. Heat input can be high at the start of a drying cycle. But as moisture is driven off, the outlet air temperature rises. The rise is sensed and the flow of gas reduced. Ultimately, all flow of gas will be cut off completely. No timer is needed with it.

The switch replaces timers presently used to terminate the drying job.

The new Maytag uses this type of system.

A fourth W-R item was an improved "Direct-Lite" pilotless ignition system for domestic dryers.

An entirely new cooking concept was introduced in Whirlpool's "Blanket-O-Flame" built-in gas range top. In this unit, secondary combustion air is metered for each particular cooking heat and is automatically supplied to the burners by a fan enclosed within the range. Conventional ranges draw secondary air from openings beneath and around the burner tops.

The fan operates whenever any burner control is turned on. The secondary air is delivered to each burner through flexible tubing.

Gas, mixed with air for proper combustion, moves out the side of the burner, where it is ignited. Air forced up the central part of the burner moves out horizontally above the flame. This results in a blanket of air cushioning the heat and distributing it evenly across the pan, regardless of shape.

The result, says Whirlpool, is such close control of the cooking temperatures that an egg can be cooked on a paper plate without the plate burning, or a bar of chocolate can be melted in its own wrapper without scorching.

It was evident in the displays that a trend toward free-standing ranges was in full swing. But the newest models are designed to simulate built-ins.

Sunray showed its "decoRange," which sits flush at sides and back and has a flanged top which clips over the adjoining countertops. Helical leg levelers assure perfect alignment. Like other set-in "built ins," the Sunray eliminates expensive cabinet work. It's available either with or without backguard. A wide range of colors and finishes are offered, including brush chrome, pastel tones, metal finish, and white.

Roper's nomination for flush-fit, pseudo built-ins is "Charm," a stunning design with eye-level oven and broiler. The oven is extra large. Charm is tastefully decorated, and uses fluorescent illumination. The ovens align with adjoining high cabinets.

First twin ovens, set side by side in built-in, shown by Chambers.

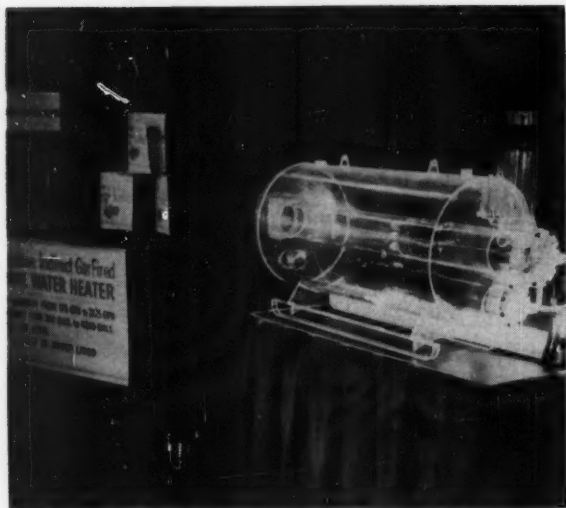
Roper's free-standing "Charm" has eye-level oven and broiler, fluorescent lights.

Sunray's set-in "built-in" has flange for snug-fit to adjoining countertop.





## BPN reports on the Festival of Flame



P-K indirect gas-fired storage water heaters have recovery capacities ranging as high as 2125 gal. per hr.

There was no evidence that built-ins were "out," however. Samuel Stamping presented the new Viscount oven, which has a built-in fan vent. This assures cooler oven doors, and a cooler, cleaner kitchen. The Viscount also has drop-down doors which expedite cleaning.

Chambers was showing its "Imperial" twin ovens, which it claims are the first such ovens to be set side by side.

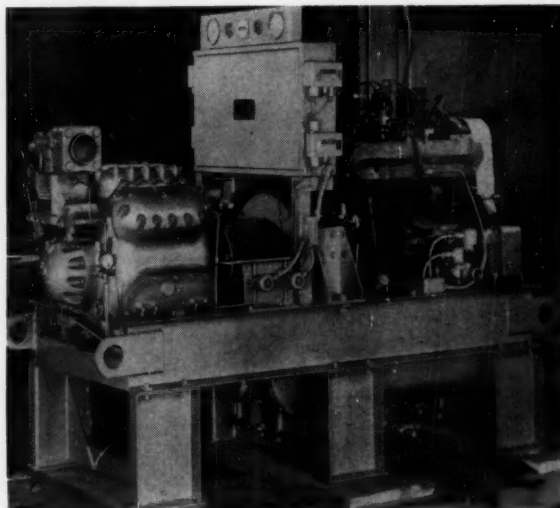
Another new double-oven built-in, this with ovens stacked one above the other, was in the Tennessee Stove Works booth. The upper oven of the "Modern Maid" has an infra-ray ceramic burner. The lower oven has a Flame Master control.

The latest things in range controls were also in evidence. The Harper-Bryant all-temp oven control system combines conventional and low-temperature ovens, operating with automatic ignition to give a full range of oven heats from 550 down to 140 deg. A single knob controls the shut-off valve and the full range of temperature settings. The unit can be recalibrated from the front of the range without removing the control knob.

Harper's "flame selector" Unimatic thermo-controlled gas range top burner was also on view. On this model, a single dial sets the temperature and adjusts the flame height to fit the size of the utensil so heat is applied at a rate the utensil can absorb. This flexible flame control makes it possible to use glass, stainless steel, porcelain enamel, and cast iron utensils for thermo-controlled cooking.

Robertshaw-Fulton also had a varied display of controls, including the "lo-temp Flamemaster," which has warming temperatures as low as 140 deg, to prevent overcooking while foods keep warm in the oven.

Mt. Vernon Furnace displayed its unusual "Kook-N-



Gas-fueled engine drives Bell & Gossett's new package liquid chiller air conditioning system.

Heat," a wide-oven 30-in. combination range. A 40,000-Btu burner on the range cooks, heats, bakes, and grills.

In the commercial cooking field, a Keating "Wimco" oven was a star. Delegates not only viewed this advanced oven, but tasted the cooking results as well. Wimco, the letters of which stand for "whirlwind isothermic muffled convection oven," is a product of an AGA research project.

The principles incorporated in the oven give rapid preheat, exact temperature control, uniform temperatures from top to bottom and from side to side, and a shorter time cycle for baking and roasting.

There is no radiant heat transfer in the Wimco, since the oven is muffled. Heat transfer is by convection, the heat being transmitted by eddies rather than flow patterns. A centrifugal fan at the rear of the oven develops 55-mph air velocity.

The result is that shrinkage is reduced sharply, cooking time is cut, and the oven's capacity is greatly increased. Baking can be done in one-fifth the space required for conventional ovens.

That the art of outdoor cookery is becoming more scientific was demonstrated in the Lazy Man open-hearth broiler shown by Chicago Combustion Corp. The Lazy Man uses permanent ceramic coals fired by gas to provide even intense heat.

"It's not the charcoal that produces the perfect charcoal flavoring," says the company. "It's the even, intense heat. The facts in the meat's surface tissues melts, drops down to the firebed and bounces back in a scorching spray, which flavors the meat and sears in the rich juices."

The Lazy Man has a wrought iron stand with a mounting for a 20-lb cylinder of LPG.

Several new air conditioning units, in a range of sizes, were on display. Arkla showed, among others, its Model 500C chiller-heater for remote installation. The unit is a self-contained package, direct-fired, which chills and heats water, and is suitable for either residential or commercial applications.

Bell & Gossett has produced a new series of air conditioning and refrigerating units operated by gas engines. Three basic units are included for commercial and industrial uses—a package liquid cooler unit for water cooling systems, a refrigeration condensing unit, and an engine compressor unit.

The Empire direct vent wall heating unit was an outstanding feature in domestic heating equipment. A sealed air combustion unit, this is the first wall heater to produce 70,000 Btu with no chimney or ducts. It can be installed against the wall or recessed in 16-in. stud spaces. The vent is at the "height of safety," 53 in. from the floor and 72 in. from outside ground level, well above outside obstructions. It has a double-wall safety vent and a directional flow register which disperses heat in three directions.

Patterson-Kelley displayed its new scalefree indirect gas-fired storage water heater. Models have recovery capacities ranging from 375 to 2125 gal. per hr and storage capacities of from 260 to 4010 gal. per hr. Shells are either "pre-crete" or copper lined.

There were, all told, some 70 different displays in the utilization section of the Festival alone. In addition, there were many other types of displays of either indirect or marginal interest to our industry—big-diameter distribution systems, for example, a remote control console for directing operations on a 900-mile pipeline from a single source, and a spiral-weld pipe making machine that spewed out pipe right across the exhibition floor. All told, there was 90,000 square ft of display space, and when some 300 delegates to the LPGA Northeast Convention toured Convention Hall as guests of the AGA, they were visibly impressed. Here was tomorrow, coming true today. ■

Norco had a three-way display of its new "flameless" gas burner, refrigerator, and sealed combustion water heater.



AGA research led to the radically different Wimco oven, wherein all heat is transferred by convection. Powerful fan creates eddies of hot air.

Arkla's chiller-heater, a self-contained package for residential and commercial use, loomed large in the exhibit hall.





# Propane piggyback— promise or possibility?

ROBERT CLAY • Managing Editor

IN MID-AUGUST, Chicago & North Western Railway Co. became the nation's first railroad authorized to "piggyback" LPG, that is, to carry it in highway transport trailers loaded on flat cars. That announcement was made in October BPN page 21. The latest news from C&NW is that it is "making cost studies and rate comparisons."

What does this mean to the LPG industry? To find out, BPN polled several industry leaders, found general skepticism, or—at best—a wait-and-see attitude. Even less impressed, a tank truck industry publication, *Petroleum and Chemical Transporter*, said in its August issue: "Piggybacking tank trailers, as of today, is only an interesting possibility."

Whether it holds great promise or is only a remote possibility, piggybacking will have to prove itself to the LPG industry. But before the industry can consider piggybacking in its proper perspective, it should know something about the C&NW experiment and piggybacking in general.

C&NW conducted its first test May 26, 1960. It used a 35-ft ICC MC-311 tank trailer built in 1953 with a capacity of 2980 gal. It was

filled with 2850 gal. of water, weighing roughly 23,700 lb. Added to the 11,200 lb trailer, this made a total weight of 34,900 lb. Dome and loading device covers were left off to observe liquid surge and the unit was loaded on a standard 85-ft flat car with a standard hitch. Two forward tests and one reverse test were then conducted in the company yards. The piggyback car impacted against approximately 10 times its weight while traveling from 6.8 to 7.8 mph.

Satisfied with the results, C&NW held a second series of tests on June 8. This time, two older, larger trailers were mounted on a standard 85-ft car. Their combined capacity and weight was 9775 gal. and 107,350 lb. With all domes and valves tightly closed, three forward and two reverse yard tests were made, speeds varying from 3.4 to 10.8 mph. The railroad felt these tests were "very successful."

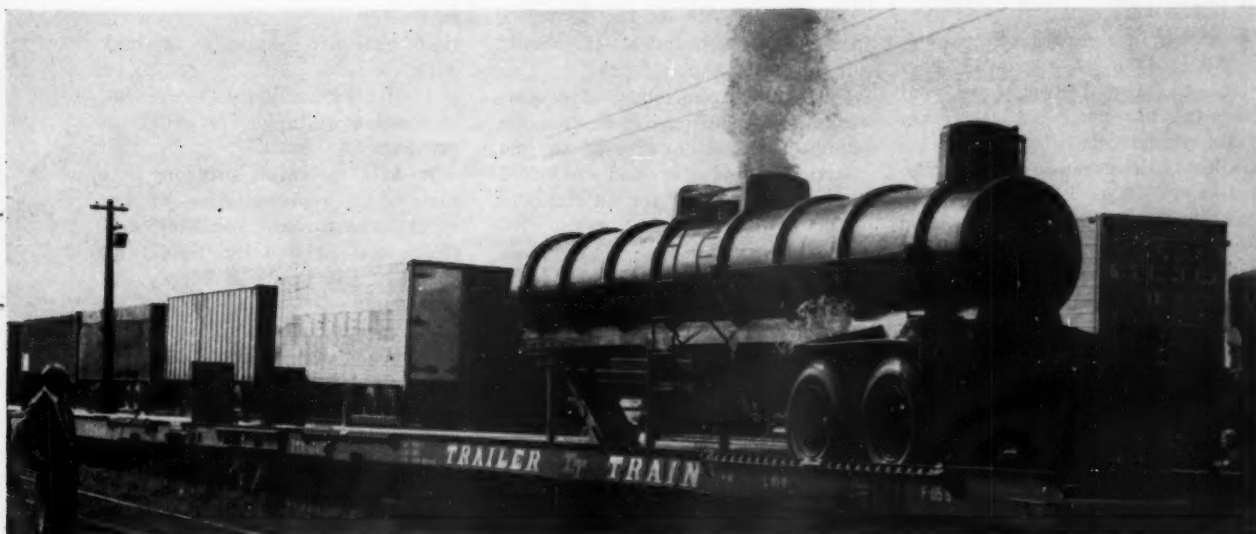
After several meetings with the Bureau of Explosives of the Association of American Railroads, C&NW ran a test on an actual freight run, from St. Louis to Chicago. Sulphuric acid was used because it is among the heaviest of the restricted commodities. A 4000-

gal. trailer was loaded with 2200 gal. of acid, giving it a gross weight of 43,790 lb. It was placed on a standard TTX car at the end of a 129-car train, which was lengthened to 157 cars along the way. Speeds were in excess of 50 mph. The test, monitored by C&NW and AAR personnel, was deemed successful.

On Aug. 18, the railroad received authorization from AAR to begin "shipments in tank trucks marked in compliance with specifications of the ICC on cars equipped with the ACF hitch." Barry Rogers, director of C&NW's Motor Services Department, says this hitch is standard on all TTX flat cars operated by the road in piggyback service. Rogers added:

"In order to determine that the tanks are equipped with safety devices of a type which will prevent spillage and still provide adequate relief in an emergency, the Bureau of Explosives has stipulated either:

- 1) that it have an opportunity to examine the valves, or
- 2) that it have sketches submitted by the carrier or private shipper using this new service. The Bureau has no objection to handling LPG since the MC-330 tank, commonly used for this purpose, is excep-



The first Chicago & North Western Railway test was conducted with a 2980-gal. trailer in the C&NW yards last May. Dome and loading device covers were left off to observe liquid surge. Note water gushing out of the top and splashing out above the wheel.

tionally well built. Incidentally, many of the country's large petroleum and chemical companies have been awaiting the results of these tests."

Rogers explained that piggyback service would be available under the company's Plan 1 and Plan 3. In Plan 1, the railroad handles trailers of regular common-carrier highway truckers, performing the intercity service, ramp to ramp. Plan 3 is similar, but involves shipper-owned trailers.

The history of piggybacking is rather brief, for it began in serious volume only five years ago. In 1955, 168,000 carloads were moved. That was 0.45 per cent of all 1955 railroad freight volume. By 1959, piggybacking had grown to 416,000 carloads, or 1.3 per cent of the total railroad volume.

In mid-September, John D. Loftis, director of marketing for the American Car & Foundry Division of ACF Industries Inc., estimated that piggybacking now accounts for two per cent of rail freight volume. He predicted that this figure would go up to nine per cent by 1965. "By then," he said, "economies will have caused most long-distance hauling to avail itself of the economy inherent in long-haul rail transportation."

Understandably standing up for

its industry, *Petroleum and Chemical Transporter* is not so impressed with piggybacking:

"Many extravagant claims have been made for it. Many grave charges have been made against it. Some have claimed that it will in large measure solve the highway problem by taking trucks off the highways. Others have claimed it would solve the railroad problem by recapturing traffic that has been lost to highway carriers.

"Piggybacking as a solution to the highway problem is actually no solution at all. In the first place, the principal points of congestion are near the cities. It is in precisely these locations that piggybacking does little good since the highway trailers have to be delivered, by highway, from the railroad siding to the point of usage of the cargo. (Further), the amount of piggybacking is so slight as to have no noticeable effect on highway traffic. In 1959 . . . piggyback operations were about one-half of one per cent of total (trailer movements).

"There is no railroad problem insofar as freight operations are concerned. . . . The railroad problem, if there is one, is in passenger operations. . . . The major railroad solution to this problem seems to be to hand—or rather—to force

passengers back to the highways, thereby offsetting any partial piggybacking solution to the highway problem. . . . (Further) while even this slight percentage (1.3 per cent of total rail volume) may . . . appear to be of some benefit to the rails, it is to some extent illusory. A large but undetermined, percentage of piggyback is not taken from highway traffic but from other forms of rail transport. . . . This has resulted from the fact that piggyback service has, in many cases, been offered at very low rates to entice highway movements."

The legal and technical problems of piggybacking, however, bother the *Petroleum and Chemical Transporter* author, Louis Reznick (who writes the magazine's "Technically Speaking" section).

Legally, the railroads seem to have had the better of controversies with trucking interests. Reznick concludes his discussion of legal problems with the statement that "there appears to be little future for the piggybacking of petroleum products . . . which ordinarily move such short distances as not to be susceptible to any possible advantages which might arise from piggybacking."

The technical aspects are the most important, since they involve

## **Propane piggy back**

the safety of the entire project.

"Can a tank truck take it?" asks Reznick. "The answer, until very recently, has been 'no.' Ordinary train operations may subject a trailer to decelerations and accelerations of 12 g. In contrast, ordinary highway movements seldom exceed 0.8 g. While the heads of tanks can take such surges, it has been determined that other parts of the trailers will develop leaks, generally in the fifth wheel area. . . . (These) harmful effects were developed during actual operations by a for-hire tank truck carrier piggybacking syrup on the New Haven Railroad.

"Several recent tests, by motor carriers as well as railroads, utilizing two special designs of rail cars have been successful. These, however, were of short or one-trip duration and may not have been sufficiently extensive to develop true service life. These cars were equipped with special shock-absorbing draft gear which limits shocks to about 1 g. Such railroad cars, however, are new, expensive, and extremely scarce.

"The problems of designing equipment for piggyback operations, such as holddowns, hose racks, pumps, and special strengthening in the fifth wheel area, are serious for even new equipment and would be extremely costly for conversion of equipment already in existence. Some unfortunate experiences have already been encountered in the Brinelling of wheelbearings due to continued pounding in one position while fixed on the rail car. (Brinelling is the extreme hardening of one spot due to continued pounding.)

"All in all," concludes Reznick, "there are . . . many engineering problems. . . . (The) solutions must all be obtained with little or no increase in trailer weight, since any advantage of piggybacking would be offset if it resulted in decreased load. . . . Insofar as shippers and private carriers are concerned . . . there may well be some possibilities of financial advantage. As regards for-hire motor carriers, there is only slight indication that the rails are either able or desirous of

attracting such business. . . . In conclusion, piggybacking of tank trailers, as of today, is neither a threat nor a promise. It is only an interesting possibility."

One must remember, of course, that the preceding comments came from a magazine devoted to one particular industry and therefore an unlikely source for an endorsement of a project that might provide competition for that industry. However, it should also be remembered that such a publication would probably be the first to call a threat a threat, if it thought it saw one.

It may be significant that BPN could detect little enthusiasm for piggybacking when it polled a cross-section of LPG industry leaders. Consider, for example, the statement of one of the top men at one of the big eastern LPG marketing firms.

"We see very little service improvement," said National Propane Corp.'s assistant to the president, R. H. Muellerleile. "Nor do we see much improvement in the rate structure over tank car shipments, except when products are shipped into an extremely congested area."

The top man at one of the biggest western LPG marketing firms was no more encouraging. Said Suburban Gas President W. R. Sidenfaden:

"Generally speaking, we have found that truck and trailer highway delivery of our commodity is more economical than rail delivery for distances up to approximately 300 miles. When you consider all of the LPG sources in Washington, California, Utah, New Mexico, Montana, and Wyoming, there are not many places for tank cars to carry LPG, except Oregon. Conceivably in some large metropolitan area of the future, restricted highway operation might dictate piggyback operation to get our commodity out of such a restricted area to where we could make the actual delivery by highway transportation."

Sidenfaden cited four specific problems to piggybacking LPG:

- 1) The customer must furnish trailer equipment;
- 2) The dimensions of conventional LPG trailers are not tailored to freight car transportation;

3) Returning empty trailers carry freight charges, making the entire movement more expensive than current shipments in tank cars;

4) If piggybacking is successful, disposition of tank cars will be a problem.

A fifth potential problem was seen by a representative of another large western marketer, Petrolane Gas Service Inc. Said Stan Smith of the Traffic & Supply Department:

"The very nature of our business means that many of our locations are in fairly remote areas which have little population and very little industry. Shipping piggyback would mean that at the destination we would have to have a tractor—or the railroad would have to have one—to pull the semi off the flat car. If only two or three tank cars are now shipped to this particular destination each month, it becomes very hard to justify a stand-by tractor."

The entire situation seemed to be best summed up by L. H. Wright, assistant sales manager of Phillips Petroleum Co.:

"It was only natural that piggybacking extend to the movement of LPG. We believe that because of the rapid changes in LPG distribution, this innovation will be of limited application at best. The changes that have taken place are the same that have already taken place in petroleum product transportation: the length of the average haul is decreasing. This mitigates against wide-spread piggybacking of LPG. Its success will depend upon the circumstances in each individual case: the rates, the location of the source, and the location of the destination."

Certainly, very much will depend upon the piggybacking rates offered the industry. That was indicated by just about every respondent to the BPN poll, including those who did not comment because of limited knowledge of piggybacking.

While the industry hasn't joyously flung its door wide open at the prospect of piggybacking propane, it has left the door open. Now, it's up to the railroads to prove that piggybacking is more than just a possibility. ■



# Every fifth trip is free with tankers made of USS "T-1" Steel

"I'm the best salesman 'T-1' Steel ever had. No other material could do the job so effectively and inexpensively. Switching to tankers built of USS 'T-1' Steel lowered our transportation cost 20%, increased the payload and lowered maintenance cost," says Mr. C. Hillyard Muncy, Assistant to the Vice President in charge of transportation for Anchor Petroleum Company of Tulsa, Okla.

"Ours is one of the nation's largest independent operations. In addition to producing and marketing our own oil, Anchor sells LPG and natural gasoline, fuel oil and asphalt. We maintain our own underground storage plants and transportation facilities," reports Mr. Muncy, "including seven trucking terminals and a fleet of 35 tankers.

"Before the purchase of our first Beaird Payliner in 1958, we leased all our transports. Today we have twenty-nine transports, all made of 'T-1' Steel. These new units," explains Mr. Muncy, "increase the payload 1700 gallons for each truck. In a year this adds up to 8,250,000 gallons extra payload. We would need forty-one of the old units to do the same job. You can be sure any transports we buy in the future will be 'T-1' Steel units."

The lighter weight and increased capacity of "T-1" Steel tankers permitted Anchor to streamline their transportation operation, reduce rolling stock and keep maintenance to a minimum. USS "T-1" Steel is furnished with a minimum tensile strength of 115,000 psi. This tough, weldable steel permits designing to higher allowable working stresses which results in increased payload. Write for the complete story on USS "T-1" Steel: United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

USS and "T-1" are registered trademarks



These 8,400-gallon tankers built of USS "T-1" Steel haul 27% more payload than heavier conventional units. They were built by J. B. Beaird Company, Shreveport, La.



This mark tells you a product  
is made of modern, dependable Steel.

United States Steel Corporation—Pittsburgh  
Columbia-Geneva Steel—San Francisco  
National Tube—Pittsburgh  
Tennessee Cast & Iron—Fairfield, Alabama  
United States Steel Supply—Steel Service Centers  
United States Steel Export Company  
United States Steel





"OUR ACCIDENT FREQUENCY and severity statistics rank far below the national average for the LPG industry." That's the proud statement president Kenneth H. Koach makes to interested visitors at Green's Fuel of Florida Corp. The statement has especial significance, since the Sarasota-based firm is a titan in the Dixie LPG industry with distributors across the face of the Sunshine State.

Koach credits his firm's enviable safety record to a persistent attack on the situations that can result in casualties to men and equipment.

"Safety is a major dollars-and-cents aspect of our business. The better a dealer's safety record, the easier he will find good insurance companies to carry him. But any safety program worth its salt requires constant surveillance by management to see that it is faithfully practiced on every level."

The entire program is built around regular monthly or semi-monthly safety meetings at every distributorship. Each manager is responsible for the meetings at his branch. He conducts the meeting, but is assisted by an appointed safety committee. All service and delivery personnel are required to attend.

Using forms supplied by the insurance company (the Aetna Group), the manager reports the proceedings to R. E. "Gene" Turner, Green's vice president. These reports are dated, as a check on the regularity of the meetings.

Turner indicates that the discussion topics at the meetings embrace everything pertinent to safety:

"Any accident that could or has

# When safety's first, safety lasts

HARRY J. MILLER

*A comprehensive safety program—built around regular safety meetings—continues to pay off for this large Florida firm.*



R. E. "GENE" TURNER  
Vice President

# EAST, WEST, NORTH OR SOUTH— THE STORY'S ALWAYS THE SAME

## Distributor boosts sales 50% with own newspaper

The Allen Butane Gas Co. in Denton, Texas, is a large and very active LP-Gas distributor with nine bulk plants, five retail stores, fourteen bobtail trucks, and three transports. Allen decided to promote their business by publishing their own monthly newspaper with the local newspaper staff doing the writing and production. They now circulate 50,000 copies of the ALLENEWS every month. During the first year of the publication, Allen Butane Gas Co. increased their sales 50%!

On the subject of suppliers, H. R. Pemberton, Vice-President of Allen Butane stated, "We've been associated with Cities Service for only a few years, but I must say that we have never been more satisfied with a supplier."

East, West, North or South, the story's always the same —fast-growing distributors choose Cities Service to meet the demands of fast-growing sales.



## Timing is an important factor to Cities Service Distributors

As a top-notch marksman, Jake J. Verhelst, President of Kool Kitchen Bottle Gas Co., in Oostburg, Wisconsin, is more acutely aware of timing than most of us. His mastery of precise timing is evidenced by the showroom full of trophies shown here. It is not surprising that such a man would carry this awareness into his business.

In the operation of his company, Jake knows that timing can be very important, particularly during a run of bad weather. It could be disastrous for an LPG Distributor to be caught short just when the demand is greatest. This is why Jake turned to Cities Service four years ago for his supply of Propane. Since then, through the worst Wisconsin weather, Cities Service has come through with reliable and punctual deliveries.

East, West, North or South, the story's always the same —LPG Distributors can always rely on Cities Service for prompt and dependable service.



3435 Broadway  
Kansas City 11, Missouri

20 N. Wacker Drive  
Chicago 6, Illinois

701 Sherland Building  
South Bend 1, Indiana

500 Robert Street  
St. Paul 1, Minnesota

3101 Euclid Ave.  
Cleveland 15, Ohio

7730 Carondelet Ave.  
Clayton 5, Missouri

170 University Ave.  
Toronto 1, Canada

1658 East Euclid  
Des Moines 13, Iowa

626 E. Wisconsin Ave.  
Milwaukee 2, Wisconsin



ATHA LIFE INSURANCE COMPANY  
THE ATHA CASUALTY AND SURETY COMPANY  
THE STANDARD FIRE INSURANCE COMPANY  
HARTFORD CONNECTICUT

# SAFETY COMMITTEE MINUTES of the MEETING

Name of Company GREEN'S FUEL OF FLORIDA CORP. Location Plant City, Fla.  
Date of Meeting March 8, 1960 Date of Last Meeting February 4, 1960  
Committee T. W. Wilder, Chm.  
C. B. Brown  
Members C. H. Spivey  
Fulton Gibbs  
Raymond Holbrook  
Present Chester Doll  
Earl Yates

The following order of business is suggested:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> 1. Roll call.                                | <input type="checkbox"/> 6. Review of accident progress records.                        |
| <input checked="" type="checkbox"/> 2. Reading of minutes of previous meeting.   | <input type="checkbox"/> 7. Review of new and outstanding recommendations.              |
| <input type="checkbox"/> 3. Unfinished business of previous meeting.             | <input type="checkbox"/> 8. Discussion of new business, projects, educational material. |
| <input type="checkbox"/> 4. Review of plant inspection reports.                  |   |
| <input type="checkbox"/> 5. Discussion of accidents and corrective action taken. |   |

☒ Check each item as completed.

Meeting called to order. All present.

The following was read by Mr. Wilder "This accident occurred in a residential area the used LP gas for a stove, a water heater and a floor furnace. A 100-gal. tank was installed outside the kitchen wall between a window and the kitchen door. The driver of the LP gas truck had parked in the driveway about 30' from the tank. With the motor and pump running, he connected the hose nozzle to the tank. Before opening the nozzle, however, the housewife came to the window and informed him that she did not want any gas. Because the tank was nearly empty and she was a regular customer the driver went into the kitchen to find out why no gas was wanted. At that time the hose broke where it was connected to the nozzle. The driver heard the report and went out the kitchen door leaving it open. He noted the liquid coming out of the hose and started for the truck to shut off the pump and motor. Before reaching it the gas ignited and he was thrown 15'. He was not seriously injured and was able to shut off the motor. The housewife ran out of the kitchen carrying one of her children and informed the driver that two others were inside. He entered and carried them out. All four occupants were burned. Damage to the house and contents were very severe. Infx investigation reveals that the excess flow valve in the hose and chocked before the motor was shut off. Before that valve closed sufficient gas had escaped to find its way through the open kitchen door and ignite from the pilot light from the pilot light on the stove. Further investigation revealed that a new nozzle had been recently installed on the truck hose, the installation of which might have been faulty."

All men were cautioned to check everything so that we will not have this type of accident.

Meeting adjourned.

This report should be kept on file and available for review for twelve months.  
(17-111 88) (See Reverse Side)

Here is an actual safety meeting report, utilizing printed forms supplied by Green's Fuel's insurance company. Meetings are held monthly or semi-monthly with a report for each meeting going to the company's main office in Sarasota.

happened to men or equipment promptly gets on the agenda."

Accident "post mortems," of course, play a very important part in the meetings. Since they follow a thorough investigation of the accident, they can include concrete recommendations for preventing reoccurrences. The amount of detail included in such discussions is indicated by the 23 typed lines devoted to an accident in the accompanying illustration of a typical safety meeting report.

In the particular accident involved, a housewife and her three children were seriously burned and damage to the house and its contents was severe. Yet, the accident

might have been even worse, if it had not been for the quick, heroic action of the driver. He must, however, share a portion of the responsibility for having left unattended the hose nozzle—which had been connected to the tank—with the motor and pump running. However, it is not his fault that the recently-installed hose broke, so a portion of the blame must go to someone else. Thus, the accident served to warn at least two types of employees, drivers and equipment maintenance men.

Installers were served a warning by an accident recounted in another safety meeting report. A plumber installed an LPG water

heater, accidentally hooking the gas line to the water line, causing several fires when toilets were flushed or faucets were turned on. The net result of the panic created in the town was that plumbers are now prohibited from connecting gas lines on Green's Fuel systems. Further, installation and service crews are more rigidly-than-ever drilled to know the lines they hook up.

Sometimes the accidents covered in the reports pose warnings to the office personnel rather than the men out in the field. One such case sharply pointed up the hazards of telephoned information. Here's a portion of that report:

"The customer probably hoped to save a service call charge. The dealer told him to turn on a certain valve and to shut it off at once if he smelled gas. He also said to wait 30 minutes before lighting the pilot. However, while the customer went about following the dealer's instructions, the wife switched on her electric stove, which apparently ignited the gas. In the resulting explosion and fire, the house was completely destroyed and the customer, his wife, and three children were hospitalized with third degree burns."

Such dramatic reports do much to make the men safety conscious, and this passion for safety must be passed on to the customer, as indicated in another report:

"A further discussion of handling 100-lb cylinders was our topic today, starting with filling them—where we have had a few bruised fingers. We have to re-educate 100-lb cylinder customers. They still want to: hook up or relocate their own cylinders; lend one to a neighbor; connect heaters, often without using flaring tools or proper fittings; haul any empty cylinder to our bulk plant for re-filling; try to pick up a cylinder at night or at any hour of the day; and try to get other gas companies to fill the cylinder. These same people use pipe wrenches on the POL fitting and often leave cylinder and regulator dangling in the air."

Most safety meeting reports are as routine as this one, with often the most important topic being a memorandum or a news item. One report, for example, noted among



other things that a "memorandum from the director of the LPG division, State Treasurer's office, regarding LPG piping in street, easement, service, etc., was read and discussed." Another report passed along the word that a trick vent was being marketed in the area and was not approved for use in Florida. When the defective model of the Thurm heater took several lives last year, all dealers reviewed the state's recommendations and rulings for trailer installations, then all regular trailer accounts were checked to make sure none of the faulty units were on Green's Fuel.

Some of the warnings passed out at the meetings are much more minor in nature, but are still very necessary to safe operation. Thus, when drivers have a natural tendency to speed up their driving during sudden cold snaps, they are constantly briefed on driving regulations supplied by the Florida Highway Patrol. And when the tourist season increases traffic flow, they are cautioned to pay closer attention to emergency equipment, flares, flashlights, etc., and to instantly report any need for repairs.

Safety meetings are frequently the occasion for inspection of rolling equipment, and may sometimes be prompted by rather unusual circumstances as indicated in one report:

"Today we made a complete inspection of brakes, light systems, and stop lights on our delivery trucks. These aids must be in good working condition to warn the driving public that we stop at rail road crossings. The state insurance commissioner forgot to tell the public about this and the delivery men are being nearly run down occasionally and bawled out frequently."

Some of the meetings are addressed by insurance inspectors. At others, reports from the insurance company's files are presented for discussion. Each is carefully scrutinized for use within the framework of each distributorship's operations. Incidentally, the insurance inspectors are not above "tailing" a driver to make doubly certain of his adherence to safety regulations.

Sometimes an entire meeting may be devoted to the orientation of a single new employee. Such a session is often a general review of safe driving and approved LPG-handling practices.

The text for these indoctrination meetings is the bible of this business—the Green's Fuel Service Manual. Now in its fifth and revised edition, the booklet was originally published by the late J. B. Green in 1937. Small enough (4¾ in. x 7¼ in.) to fit a large pocket, the 48-page booklet has a serviceable but pliable soft cover. It is

carried by every serviceman in the organization and is intended to meet about every conceivable situation of potential hazard, as well as cover good installation and servicing practices. It includes everything from "Procedure for Unloading Tank Car" to "Water Heater High Bill Complaints," to quote but two section headings.

While practically the whole book is concerned with safe operation, two sections, "Responsibility for Safety" and "Safety Rules and Regulations," are especially pertinent and are reprinted in full in the accompanying box.

The manual is only one of the many pieces of safety-slanted literature that go to all Green's Fuel men. While they all have a basic knowledge of the usual standards, codes, regulations, etc., they are constantly briefed with current information, for which the meetings serve as a clearing house.

Much of this information is accident prevention literature, a virtual fetish with Koach:

"There are infinite sources of such material available for the dealer's asking. Even when a man leaves on vacation, we include with his vacation check brochures telling him how to keep safe while driving, boating, and swimming."

"Our company and its dealers have an outstanding 25-year record in promoting safe distribution and use of Green's Fuel Gas," Koach



Rolling stock is inspected daily and needed repairs are made fast. The company has been commended by highway authorities for the safety slogan painted on all bumpers.



Careful inspection, preparation, and maintenance of below-ground equipment helps the safety record. As one company official puts it, "Much of our safety program is buried!"



## RESPONSIBILITY FOR SAFETY

Each employee is responsible for performing his work in a safe manner to avoid accidents; he shall notify his supervisor before attempting any work appearing hazardous.

It is the duty of any employee encountering a public hazard from company equipment such as

bad leaks, exposure of tank equipment to fire, etc., to guard the public from danger until he is relieved or the hazard removed.

All accidents and injuries must be reported at once; report all information pertaining to an injury or accident, particularly names and addresses of any witnesses.

Any articles of evidence must be carefully preserved and marked for identification. In cases of serious accidents, photographs showing essential facts should be taken at once. Any employee shall give all aid and assistance possible at any time whether involved in the accident or not.

## SAFETY RULES AND REGULATIONS

Chock blocks shall be used while unloading tank cars, loading fill trucks or transports, and while filling customer systems.

Fill trucks and transports shall be equipped with static strap or chain.

Tank cars, transports, and fill trucks shall be effectively grounded with static cable and clamp during all loading and unloading operations.

Storage tanks larger than 2000-gal. we shall be individually and separately grounded.

Tank car unloading spot shall be insulated from main track, all rails bonded electrically and grounded and bonded to bulk plant piping.

Smoking, fires or open lights are prohibited within 50 ft of bulk plant, pumphouse or loading and unloading zones. "NO SMOKING" signs must be posted on all sides of fenced bulk plant areas.

Never use fire to thaw tanks, meters, regulators or any type of gas equipment; cold water will usually do the job.

Never leave any ditch or excavation

unattended or unbarri-caded.

Always cut off gas supply when making changes in piping or appliances.

Never try to adjust or tamper with a safety relief valve—breaking the seal nullifies Underwriters' approval.

Make certain all hose lines are protected with an excess flow check valve and a hydrostatic relief valve if between two valves.

Never transport an ICC cylinder unless the valve is protected by a cap or fixed collar.

Familiarize yourself with the location and operation of fire extinguishers and equipment; keep in mind a plan of attack, approach, and method to be used for fires at various locations in plant or equipment.

"Good housekeeping" is a safety requirement: unsafe conditions with respect to floors, walks, yards, stair treads, and hand rails must be immediately corrected—walks, aisles, and stairways must be kept clear. Appliance and equipment should be safely stacked

or secured. Grass, weeds, and combustible materials must be kept away from storage tanks and loading or unloading areas.

Safety gloves should be used while disconnecting liquid hoses or lines (burns from compressed liquids are painful and deep).

Goggles are to be used when welding, chipping, buffing, grinding, drilling or cutting masonry, handling acids, caustics or molten metals.

When removing plugs or caps from openings, gauging tanks or opening valves, always stand to one side of, or behind the fitting.

Every gas customer should be told:

1. Location of the gas cut-off valve.
2. If odor of gas is detected, to report the matter at once to the gas company, and
3. Never use fire to locate a leak.
4. Air the premises to minimize hazard.
5. Never open or close any electrical switch or device until odor of gas is eliminated.

These two sections from Green's Fuel's 48-page "Service Manual" are especially concerned with safety.

proudly emphasizes. "Much time has been devoted to original research work in safety and other company operations.

"Our safety program," he explains, "begins the moment a new employee enters our organization: he gets a complete physical. Should he be injured in an accident, he must obtain a release from the

attending physician before he reports for work. On the other hand, if he caused the accident—went in a ditch, for example—he is required to take a physical to possibly determine the reason for the accident. Perhaps he suffered a blackout from dizziness due to high blood pressure or diabetic shock.

"And maybe," Koach adds, "he

shouldn't be driving a truck at all. He might well be switched to some other job in our operation, thus making work safer for everybody concerned, including himself."

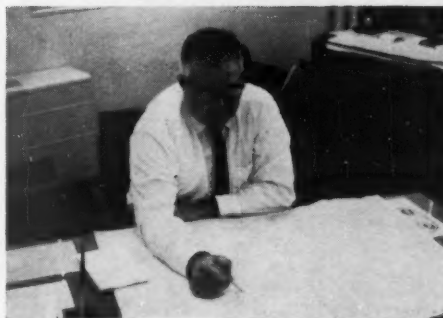
Based on such sound, sensible safety-thinking, this "safety first" program simply had to produce an enviable safety record that lasts and lasts! ■

## Mississippi's claim: Best accident record, lowest insurance rates in the U. S.

*Is that government best which governs least? Or in an industry as inextricably tied to the public welfare as ours, must we solicit the assistance of our state governments to protect the public against irresponsible operators—and against itself as well?*

*In June BPN, we explored the regulatory machinery of the state of Oklahoma, where reasonable regulation, set up and operated in a spirit of government-and-industry co-operation, is doing an effective job.*

*This month, we take a brief look at Mississippi, where regulation is, if anything, more rigid than in Oklahoma. Here again, we find the industry itself playing a major role in establishing the machinery and helping to set the course it takes.*



C. D. Pritchard is Mississippi's chief safety inspector. Here, he examines an installation blueprint.

DEALERS IN MISSISSIPPI CLAIM they have the best accident record and the lowest insurance rates in the United States. If this is true, a fair share of the credit must go to the state regulatory body which watches over it.

Mississippi has some stringent laws governing dealers' activities. It has a fee schedule that is fairly stiff. Starting an LPG dealership in the state is not something that can be done on a shoestring.

Still, Mississippi's regulatory machinery is partially the product of the dealers themselves. They asked for regulation a quarter of a century ago. When the present law was written in 1946, they were consulted. Through the years, proposed amendments to the statutes and changes in the rules have been checked out with them. So, to a large extent, the toughest provi-

sions of the law are the things they themselves wanted.

The Mississippi L. P. Gas Dealers Association has also had its say in the development of regulations. Its legislative committee acts as a spokesman for the industry on statutes and rule changes that are proposed. If this seems presumptuous on the association's part, it is not; practically 100 per cent of the licensed dealers in the state are members.

And the toughest provisions have also helped exclude "gas peddlers" from the state. Dealers must be licensed and bonded; tanks and installations must be inspected; adequate insurance must be carried; and today, a dealer to serve gas in bulk must have minimum storage facilities consisting of two 7000-gal. tanks.

These and other provisions of

WILLIAM W. CLARK • Editor

A BPN Exclusive

## You need these to go into business

**MOTOR VEHICLE COMPTROLLER**  
STATE OF MISSISSIPPI  
Liquefied Compressed Gas and Equipment Division  
APPLICATION FOR PERMIT

Date \_\_\_\_\_

To the Motor Vehicle Comptroller  
Jackson, Mississippi

Application is hereby made for a permit to engage in business as:

**Kind of Business** (Check type of Permit desired)

( ) 1. Distributor of LP Gas  
( ) 2. Distributor of Anhydrous Ammonia  
( ) 3. Manufacturer of LP Gas Equipment, Containers or Systems  
( ) 4. Distributor and/or installer of LP Gas Equipment, Containers or Systems  
( ) 5. Distributor and/or installer of Anhydrous Ammonia Equipment, Containers or Systems  
( ) 6. Installer of LP-GAS Equipment, Containers or Systems  
( ) 7. Installer of Anhydrous Ammonia Equipment, Containers or Systems

Name \_\_\_\_\_ Address \_\_\_\_\_

Individual, Partnership or Corporation \_\_\_\_\_ Capital Stock \_\_\_\_\_

Incorporated under Laws of State of \_\_\_\_\_

Principal Place of Business (Home Office) \_\_\_\_\_

Other Places of Business or Distribution Points \_\_\_\_\_

**Bond and Insurance Information** (Unless this section is carefully filled in, your permit cannot be issued.)

Bond Required	Name of Surety	Amount
Tax and Current Bond		\$1,000.00
LP Gas Equipment and System Bond		\$2,000.00

**Insurance Required**

Insurance Required	LIMITS OF LIABILITY			None
	Auto	Employer	Manufacturer & Contractor	
Automobile Public Liability	\$5,000	\$10,000	\$5,000	
Employers Liability	5,000	10,000	5,000	
Manufacturers & Contractors	5,000	10,000	5,000	
Public Liability	5,000	10,000	5,000	
Products Liability	5,000	10,000	5,000	

(The Motor Vehicle Comptroller may revise the kind of insurance required, to meet special conditions.)

Have you paid all State or County privilege taxes required for your type operation? \_\_\_\_\_

Have you heretofore given bond and operated, as you are now applying for permit to operate? \_\_\_\_\_

Name \_\_\_\_\_

**STATE OF MISSISSIPPI**  
**MOTOR VEHICLE COMPTROLLER**  
Liquefied Compressed Gas and Equipment Division  
JACKSON, MISS.

PERMIT NO. \_\_\_\_\_

**PERMIT**

KNOW ALL MEN BY THESE PRESENTS  
That \_\_\_\_\_  
of \_\_\_\_\_  
having complied with the requirements of the Laws of the State of Mississippi, is hereby granted a PERMIT to engage in business as \_\_\_\_\_  
by authority granted me under said laws.  
Given under my hand and seal of office this \_\_\_\_\_ day of \_\_\_\_\_, 195\_\_\_\_.  
JACKSON, MISSISSIPPI  
MOTOR VEHICLE COMPTROLLER

**INSTALLER'S IDENTIFICATION**  
MOTOR VEHICLE COMPTROLLER  
JACKSON, MISSISSIPPI  
To be used by ALL LICENSEES  
Name of Licensee \_\_\_\_\_  
Class of License \_\_\_\_\_  
Expiry Date \_\_\_\_\_  
This card is the property of the Motor Vehicle Comptroller and must be returned to him if lost or damaged.  
Signature \_\_\_\_\_  
Date \_\_\_\_\_

**LIQUEFIED PETROLEUM GAS**  
DRIVER'S CERTIFICATE  
MOTOR VEHICLE COMPTROLLER  
JACKSON, MISSISSIPPI  
To be used by ALL LICENSEES  
Name of Licensee \_\_\_\_\_  
Class of License \_\_\_\_\_  
Expiry Date \_\_\_\_\_  
This card is the property of the Motor Vehicle Comptroller and must be returned to him if lost or damaged.  
Signature \_\_\_\_\_  
Date \_\_\_\_\_

In order to be allowed to engage in any one of seven different LPG or anhydrous ammonia sales activities, applicants must satisfy the requirements set out on the application form (above). Drivers and installers must also be licensed, as evidenced by the cards shown at right.

the law make it necessary to have a sizeable staff to properly enforce them. There are 15 inspectors, each of whom works out of a regional base. These men report to a chief inspector, located at division headquarters in Jackson, the state capi-

tal. Top man in the division is the director, C. D. Pritchard.

The Liquefied Gas Division is a part of the office of the Motor Vehicle Comptroller. This alignment is partially a matter of convenience: the division is supported

chiefly by a state levy of one-eighth of a cent per gallon on all LPG sold in the state, and this tax is collected by Motor Vehicle Comptroller collectors.

The division functions under the authority of "Rules and Regulations, Liquefied Petroleum Gas Equipment and Containers," dated June 1, 1952, and revised in 1957 and again this year. NFPA Pamphlets 54 ("Standard for the Installation of Gas Appliances and Gas Piping") and 58 ("Standard for the Storage and Handling of Liquefied Petroleum Gases") are the basic codes which apply. But the state's "Rules and Regulations" contain a number of other provisions—chiefly on licensing and inspections—that are not covered in the NFPA codes.

To do business in the state, manufacturers must post a \$2000 bond. Tank manufacturers must also submit to the comptroller's office blueprints of every type of container "proposed to be sold or installed" in the state. This must include a list of valves and fittings, and the manufacturer of each. Furthermore the law states that "all containers larger than 2000-wg. capacity shall have the finished structural weight shown on the drawing in order that the safe supported area for foundation piers may be calculated."

Only appliances approved by the AGA Laboratories "or other recognized testing laboratory" and bearing the laboratory seal may be installed in the state. "Other laboratory," according to Pritchard, means Underwriters Laboratory.

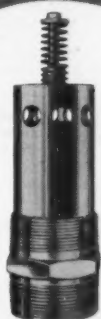
### To become a dealer

For a dealer to go into business in Mississippi, the following are required:

- A proof of financial responsibility in the form of liability insurance policies with limits of \$50-\$100-\$50 thousand. These cover automobile liability, employer's liability, manufacturers and contractors public liability, and products liability. These limits were just increased this past year, having previously been set at 5-10-5.

- A surety bond in the amount of \$2000.

**HIGHEST FLOW RATES** available...with **SAFETY** that can't miss



TYPE F155



TYPE F151



TYPE F145



TYPE F172



TYPE F106



TYPE F102



TYPE F130



TYPE F135

*from the complete line of*  
**FISHER**  
**EXCESS FLOW**  
**CHECK VALVES**



A complete line of valves... complete safety... highest flow rates... that's the story in a nutshell. These are the things you look for when you buy Excess Flow Check Valves, and with Fisher you get them all.

Every Fisher valve is built to extra heavy standards to insure the ultimate in safety, yet they provide maximum flow and still maintain minimum differential pressures. All Fisher Excess Flow Check Valves are listed by Underwriters' Laboratories under file number MH6055.

*Send today for literature containing complete details.*



IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD... CHANCES ARE IT'S CONTROLLED BY..

**FISHER**  
*Controls*

**FISHER GOVERNOR COMPANY** Marshalltown, Iowa SINCE 1880



• A \$1000 gasoline and oil distributor's bond. Before he can purchase or build a bulk plant, blue prints and specifications on both the tank and the supports must be submitted and approved. After installation, the plant and all containers must be inspected and approved.

• He cannot purchase a cargo tank for vehicle mounting without submitting blue prints and specifications for approval.

• As of this year, he must have minimum storage facilities of two 7000-gal. tanks. This provision just passed the state legislature in the late spring.

Why two 7000-gal. tanks? In the words of C. D. Pritchard, this requirement "gives some assurance to the customers he serves in the summer that he can serve them in cold weather. It also provided a tank for butane and one for propane, thereby reducing the possibility of filling butane tanks with propane.

## No gas peddlers

"It also (bars) the gas peddler type of dealer who had no base of operation, who buys gas wherever he can find it, and peddles it wherever he can find a customer; and whom the enforcement authorities cannot find, control, or supervise. (That) this danger can be reduced by passage of this bill... has been demonstrated in Louisiana, Arkansas, and Alabama."

The 7000-gal. figure was selected because it is an average transport load in Mississippi.

After a dealer has satisfied these requirements, he is in business, but only in the narrowest sense. He cannot use a driver (except on an interim, emergency basis) until that driver has been licensed by the division. The license is issued only after a test of the applicant's qualifications in "safe hauling and handling of L. P. gas."

"This provision, which was added to the law in 1957, was the best single measure we have ever taken to promote safety," declares

## Installations are carefully policed

Mississippi authorities feel they have all possible weak points covered in the installation of systems and appliances. Above are some of the forms and tags required.

Pritchard. "Before that, irresponsible drivers were filling systems that had failed to pass inspections. But now we have control over them. The license can be revoked for such practices." Obviously, to put teeth into the provision, the law imposes fines on a driver who transports gas without a license.

If a dealer wants to do more than simply "peddle gas," there are other requirements that must be met. He can't install a container until it has been inspected; this is done by a state man in the dealer's yard. Inspection rates per container vary from \$1, for those having a capacity of 100 wg or less, to \$5 for all containers of over 1200 wg.

Tanks that are approved have a metal tag affixed. No one can either install or fill an unapproved tank without facing stiff penalties.

Before he can install a system, his installers must be tested and licensed. The test consists of a written examination and a field examination supervised by one of the division's inspectors.

Appliance dealers, too, must be licensed, even if they sell no gas and install neither appliances nor systems. If they only sell the appliance, they pay no fee for the license. If they make installations, they must have a qualified installer and must furnish a \$10,000 bond or all insurance requirements, except the \$1000 gasoline and oil distribution bond. This man must also pass a qualifying test.

Having qualified both the equipment (and appliances) and the personnel (LPG dealers, drivers, appliance dealers, and installers), the state office also "qualifies" the installations themselves.

### Inspection of systems

Once a system has been installed, it must be inspected. The installer is provided with a supply of "temporary permit" cards, which are sequentially code-numbered for control purposes. When the installation is made, the installer puts his name and certificate number on one of the cards and affixes it to the system. This permits the use of the installation for a period not to exceed 90 days. Then, within 48 hours, he must report the job to the Liquefied Gas Division. As

## Appliance retailers must also qualify

STATE OF MISSISSIPPI  
MOTOR VEHICLE COMPTROLLER  
Liquefied Compressed Gas and Equipment Division  
JACKSON, MISS.

PERMIT

KNOW ALL MEN BY THESE PRESENTS:

I, \_\_\_\_\_

being duly qualified with the requirements of the Laws of the State of Mississippi, do hereby grant a PERMIT to engage in the business of the Distribution of Liquefied Compressed Gas Appliances, by authority granted me under and from the \_\_\_\_\_

Given under my hand and seal of office this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

JACKSON, MISSISSIPPI

MOTOR VEHICLE COMPTROLLER  
STATE OF MISSISSIPPI  
Liquefied Compressed Gas and Equipment Division

APPLICATION FOR PERMIT

To the Motor Vehicle Comptroller  
Jackson, Mississippi

Date: \_\_\_\_\_

Application is hereby made for a Permit to engage in business as:  
DISTRIBUTION OF LIQUEFIED COMPRESSED GAS APPLIANCES  
(Sale of ranges, refrigerators, hot water tanks, boilers, etc.)  
(Name Customer System name order or appliance classification)

Name: \_\_\_\_\_ Full Name: \_\_\_\_\_ Address: \_\_\_\_\_

Individual, Partnership or Corporation

Name: \_\_\_\_\_ Address: \_\_\_\_\_

Name: \_\_\_\_\_ (Name of Officer or Partner) Address: \_\_\_\_\_

Incorporated under Laws of State of: \_\_\_\_\_ Capital Stock: \_\_\_\_\_

Principal Place of Business (Home Office): \_\_\_\_\_

Other Places of Business or Distribution Points: \_\_\_\_\_

Have you paid all state or county privilege taxes required for your type operation?  
Name: \_\_\_\_\_ By: \_\_\_\_\_

There is no fee for appliance stores, but they must be licensed—and there is a fee involved and special licenses required if they employ an installer.

soon as possible, a state inspector checks the job out. If it is satisfactory, he removes the temporary tag and fills out an approval form. One copy is given to the owner and the other is filed with the state office.

After the system has once been approved, it cannot be altered in any way without prior approval of the division. Any violation can result in a suspension of up to one year. This requirement may be bypassed in case of emergency, but again the division must be notified within 48 hours.

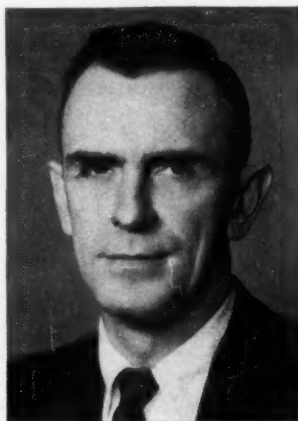
Installations that are improperly made and fail to pass inspection are reported back to the installer. If the fault is an important one, he

must correct it within 72 hours after which it will be reinspected and an appropriate report filed.

To make sure that appliances are installed correctly—and by an authorized person—the division requires that every appliance dealer report (again within 48 hours) the sale of every appliance. He must also have affixed to it a "caution" tag notifying the buyer that it must be installed by a qualified person.

When an installer puts in the appliance, he sends in a report to the state; the inspector matches this report to the dealer's sales report. This gives an accounting of where every unit was sold and who installed it. There is no "temporary"

# Linde



## TO OUR FORMER CUSTOMERS

We are pleased to advise you that arrangements have been completed for the transfer of our cylinder manufacturing business to Cylinders, Inc.

In addition to the transfer of the physical machinery, we are imparting to them all our relevant engineering knowledge.

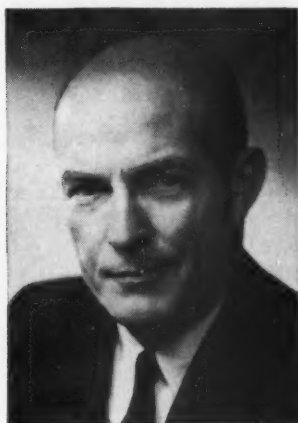
So confident are we in the capability of Cylinders, Inc. that we have already placed orders with them for our acetylene cylinder shell.

To our many friends and customers of over the past 50 years, permit me to express our thanks for the many warm ties and associations that we have enjoyed.

G. A. KELLY  
SALES MANAGER, LINDE COMPANY  
DIVISION OF UNION CARBIDE CORPORATION

"Linde" and "Union Carbide" are registered trade marks of Union Carbide Corporation.





## CYLINDERS INC.

**We are 9 days ahead of our schedule  
TO SERVE YOU.**

With the take over by Cylinders, Inc. of the plant machinery and full facilities and research development of the Propane and Refrigerant Cylinder Manufacturing Department of Linde, we have programmed the scheduling of a production flow which will fulfill your every need.

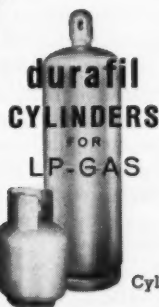
Completely supported by the technical know how and production engineering genius of the Cylinder Department of Linde, our new plant planning for you is rapidly taking final shape.

It is our most urgent desire to serve your industry in the most exacting fashion that your own requirements deserve.

All haste is being made to commence production to your requirements and we already have been able to reduce our timetable on your production by 9 days.

Your inquiries are welcomed and will receive immediate attention.

WILLIAM MCENTEE  
PRESIDENT



Cylinders, Inc. Successors to the propane and refrigerant cylinder manufacturing business of *Linde* Company, Division of Union Carbide Corporation.

*This form guarantees installation reports*

Liquefied Gas System And/Or Appliance Sales Report  
 TO THE  
**MOTOR VEHICLE COMPTROLLER**  
**JACKSON, MISS.**

Sold to \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Date of sale \_\_\_\_\_ (City) \_\_\_\_\_ (County) \_\_\_\_\_ Miss.

Description of System and/or Appliances sold, or delivered, as follows:  
 Manufacturer of Tank \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Manufacturer's Serial No. \_\_\_\_\_  
 State Approval Tag No. \_\_\_\_\_

Space Heaters \_\_\_\_\_ Size water gallons \_\_\_\_\_  
 Wall Heaters \_\_\_\_\_ Hot water Heaters \_\_\_\_\_  
 Cook Stoves \_\_\_\_\_ Floor Furnaces \_\_\_\_\_  
 All other Types of Burners \_\_\_\_\_ Forced Air Circulators \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**IMPORTANT:** Section 14, of H. B. 123, of Regular Legislative Session of 1946, requires that this report be made to the Motor Vehicle Comptroller, within twenty-four (24) hours after sale, or delivery of any gas system, and/or appliance to any person, or corporation, except another dealer in such systems or appliances. Failure to file such report makes any person, firm or corporation subject to punishment by a fine of not less than ten dollars (\$10.00) nor more than one hundred dollars (\$100.00) for each offense. Each separate sale or delivery not reported constitutes a separate offense.

Date \_\_\_\_\_, 195\_\_\_\_ Signed \_\_\_\_\_  
 \_\_\_\_\_ NAME OF FIRM  
 By \_\_\_\_\_  
 \_\_\_\_\_ ADDRESS

Dealers in appliances and/or systems must submit one of these forms within 24 hours, as prescribed by law. This procedure makes it possible for Mississippi to carry out its comprehensive inspection program.

tag required on appliance installations, so they may be used without limitation. However, the inspector eventually—as soon as possible—checks out every installed appliance that has automatic controls. Non-automatic appliances are inspected only on a spot check basis.

All this work keeps the state inspectors hopping. In 1959, the 15-man staff made a total of 13,463 calls on LPG dealers. (There are approximately 130 in the state.) They also made 242 calls on appliance dealers (there are approximately 1500 of these) to see that tagging and approval regulations had been complied with. They inspected and approved for use 10,485 new LPG tanks, and reinspected and approved 2460 tanks.

(Used tanks can be sold only after inspection and approval. Buried tanks must also be inspected every time they are dug up.)

They also inspected and approved 15,069 L. P. gas systems, rechecked and approved another 1340. They investigated 54 fires.

### Bulk plant inspections

Inspections of appliances and installations are not the only jobs the inspectors handle. They also make an annual inspection of bulk plants to see that they are up to code. A number of plants built before the 1946 law went into effect are still in existence. These need not comply with the provisions of the law in every respect, but still must be

safe in the opinion of the division. The staff men help the dealers work up new plans to modernize their plants and make them safer; they draw up specifications on re-piping, etc.

The division also furnishes shop inspectors for five tank fabricators located in the state—Mississippi Tank, Jackson Tank, Banks, Quality Steel, and Bull Johnson Steel. These men are on duty full time at these plants, certifying the metal and the welds.

All inspectors are given written and practical tests, and spend time out in the field with experienced inspectors before being put on their own.

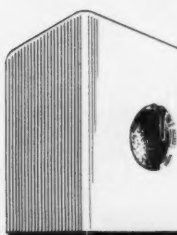
The division also works with Interstate Commerce Commission, checking incoming trucks loaded with product.

All of Mississippi's rules and regulations and procedures are based upon the principle of safety. The division goes a step farther, however, by carrying on active safety education. One of its outstanding activities is the series of safety schools it has carried on in cooperation with the state association.

Such things pay off in self-interest as well as in public good. Last year, for example, 54 fires were inspected where LPG was suspected. In only 22 of them was the suspicion found to be warranted. Eleven of them were caused by electricity, two by kerosene, one by lightning, and five by wood or coal. The remaining 13 were unsolved, but, according to Pritchard, LPG was absolved in every one of them.

Of the 22, only seven involved action of dealers or their employees. There were no fatalities in this group. The others were the fault of the owners, and among these there were two fatalities.

Thus, through the action of the division, dealer liability was confined to those incidents where they were actually at fault. Pritchard and his inspectors made numerous appearances in court as expert witnesses. The inspection records, which are kept on file for several years, were valid evidence that installations were made with the care that the law requires, and that the equipment involved had been inspected and approved. ■



# 1938

... The year the concept of home laundering was changed forever... the year the first really salable automatic clothes dryer came into being, and appliance dealers suddenly faced the happy prospect of a completely *new* business potential. Remember?...

It was the year of the HAMILTON JUNE DAY DRYER, and after all those years countless JUNE DAY DRYERS are still in regular use!

Way back then, when Hamilton introduced the automatic dryer, this promise was made to dealers: "... the Hamilton frees you from the expensive nuisance of service calls."



# 1960

NOW, 22 YEARS AND OVER A MILLION DRYERS LATER...

Hamilton is still keeping that promise. In addition to producing the original automatic dryer, Hamilton has continued to pioneer in the development of many "firsts" to make clothes drying easier, quicker and more convenient for the homemaker with each succeeding year. And in spite of the many features added through the years, that original promise of service-free operation is still true. Hamilton has consistently maintained a service-cost record among the lowest in the industry.

Product features, styling, dependable service to the consumer... low service cost, sound merchandising and promotion programs for the dealer... all add up to more sales and more profit for you.

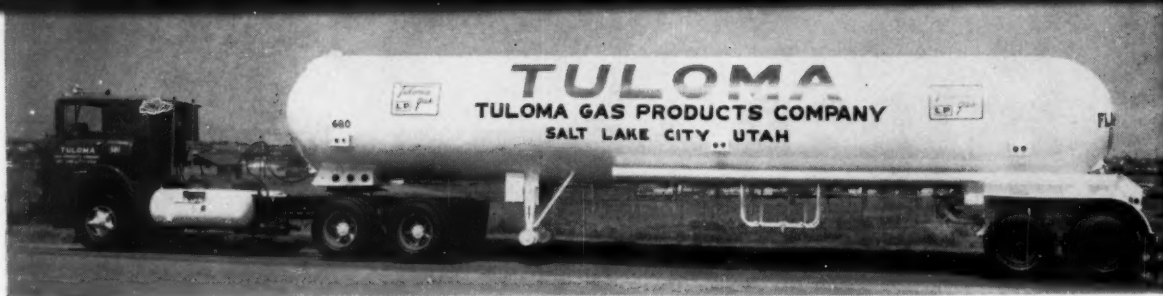
If you're interested in making more money... on the bottom line where it *counts*... see your Hamilton distributor for the full story or write Hamilton Manufacturing Company.

When it comes to LP Gas Appliance Business

**YOU'RE A STEP AHEAD WITH HAMILTON** / the original...and still the leader

# Hamilton

AUTOMATIC WASHERS • AUTOMATIC CLOTHES DRYERS • HAMILTON MANUFACTURING COMPANY • TWO RIVERS, WIS.



## Innovations galore on "world's largest" transports

CRAMMED WITH INNOVATIONS, two truck transports, each of which carries more LPG than the average railway car, went into service for Tuloma Gas Products Co. in late September. The highway giants debuted only months after the Tulsa-based LPG supplier introduced its "world's largest tank car" as part of a continuing plan to increase the size and efficiency of its transportation facilities.

The mammoth transports, which operate out of Tuloma's Salt Lake City terminal, are 60 ft long. Each carries 11,287 gal. of gas. The trailer fabricator, Cherokee Steel Co., believes them to be the largest single tandem transports ever built.

The 45-ft-long, 80-in.-diameter tank is made of high-tensile-strength, quarter-inch, T-1 steel plate. Its design achieves maximum weight distribution and a lower center of gravity-long, a problem with large capacity truck transports.

Despite the tremendous capacity, weight on the truck's individual axles meets all rules and regulations of the western states in which it will operate. When filled with LPG, the weight on the steering axle will be 13,500 lb, with 16,500 lb on each of the other four axles. This is a few hundred pounds under the 79,900 lb total gross weight limitations in that part of the nation.

The huge trailer is pulled by a GMC tilt-cab tractor, which helps keep the rig within the maximum 60-ft length. At the same time, it places the engine directly over the front axle, allowing proper overall weight distribution.

The big V-12 engine is the first of its kind to be converted to LPG. Propane's clean-burning properties are expected to greatly reduce en-

gine wear. The carburetion system, fed by a pair of 125 gal. saddle tanks, helps develop 275 hp.

"We expect to get at least 200,000 road miles from each unit before an overhaul," stated R. C. Williams, Tuloma's transport supervisor. "Many small items, such as using alternators in the place of generators to produce full electrical capacity at all engine speeds. This will have a long range effect on operational efficiency."

Specially designed instrumentation to forewarn trouble is another first. A fuel filter gauge indicates pressure drops in the fuel system. Keeping a constant fuel pressure results in added engine performance. Tuloma's big rig is also equipped with an rpm and mph tachograph to give a detailed operational log.

Unloading time has been cut by a 300-gpm four-in. centrifugal pump designed especially for Tuloma by Blackmer Pump Co. It will permit unloading of the big tank in about 35 minutes—less than required for conventional-sized tank trucks of 6000 to 8000 gal. Operated by a permanent drive shaft running from the front of the trailer, the pump is on the trailer tandem, only three ft from the liquid outlet valve. During unloading operations, the shaft is connected to the truck's power take-off by a short, removable, telescoping connecting-shaft. This arrangement eliminates a number of time consuming hose connections and couplings.

The trailer's liquid outlet opening is fitted with a four-in. Shand and Jurs hydraulically operated valve. Unique in itself due to the size, the valve is part of the most noteworthy safety feature on the truck—a device to open and close

the main liquid outlet by remote control.

Operated by a relatively simple air-actuated control, this device designed by Williams virtually eliminates hazards from ruptured hoses.

A manual switch at the end of 50 ft of small diameter air hose is carried by the driver. When the switch is on, air is applied to a converted brake diaphragm, activating a hydraulic cylinder which opens the valve. At the same time, air is applied to the truck's brake system, locking the wheels. It is impossible to move the truck until the valve is completely closed. The flow of gas can be instantly shut off by simply releasing the remote control switch. Experiments indicate gas can be shut off in less than two seconds—from a distance of 50 ft.

An extra safety feature built into the hydraulic line of the four-in. valve is a 160-deg. fuse plug. The fuse melts in the event of fire and releases hydraulic fluid, closing the spring-loaded valve.

In addition to the remotely-operated brake application, the new unit has a positive, mechanical brake compensator which exerts gradual pressure on the brake shoe if air is lost during operation. This is particularly valuable for mountain driving. Indicated by a gauge in the cab, this device provides an early warning and a guard against brake failure.

A new automatic lubricator timing device systematically greases every one of the 69 lubrication points on the truck and trailer every 45 minutes. Under extremely poor driving conditions, the driver can lubricate the truck more often by pressing a button on the dash. A light on the instrument panel warns when any point lacks proper lubrication. ■





## "Now I can reach any of my drivers...anywhere ...anytime!"

### **YOUR BUSINESS, TOO, CAN PROFIT FROM MOTOROLA 2-WAY RADIO CONTROL**

#### ***Here's how it cuts costs...***

Your drivers are routed directly from job to job—no time wasted phone-hunting, parking and phoning in—no miles wasted backtracking or "deadheading". This is a proved fact: Your savings will more than pay for your Motorola system!

#### ***Here's how it builds sales...***

Your drivers will make more calls per day—and you'll *get* new sales because Motorola dispatched service *makes salesmen* out of customers. You'll find it's *profitable* to say, "He's on his way," with Motorola 2-way radio.

**See for yourself—Your Motorola man will show you a nearby system in action. He'll show you proof of Motorola efficiency and dependability. Call today. See your local Yellow Pages under "Radio Communications".**



**Motorola . . . the communications specialist to industry for nearly three decades**

# **MOTOROLA 2-WAY RADIO**

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill. • A Subsidiary of Motorola Inc. • SPaulding 2-6500

# news



## Transcontinental subsidiary to build 1080-mile LPG interstate commerce pipeline



This map of the southeastern United States shows the route to be taken by Trans-Southern's \$63 million LPG pipeline.

TRANSCONTINENTAL GAS PIPELINE CORP. has formed a wholly owned subsidiary to build and operate a \$63 million LPG pipeline in interstate commerce. Trans-Southern Pipeline Corp. is expected to be in operation by November 1961.

Initial daily capacity will be 60,000 bbl. The maximum pipe diameter of the proposed system will be 12 in.

The new pipeline will transport LPG from the Gulf Coast into the southeastern states. It will originate at Mont Belvieu, Texas, and extend 1080 miles to Danville, Va. A 215-mile spur will be built from Atlanta to the Georgia-Florida state line.

Underground storage caverns will be mined in granite substructure near Atlanta. Capacity there will be 1,000,000 bbl. Near Eunice, La., storage for 350,000 bbl is pro-

posed in salt domes.

A 35-mile line from Laurel to Hattiesburg, Miss., and a 25-mile line from Linden to Demopolis, Ala., will extend to existing privately owned storage facilities.

Points at which Trans-Southern will accept L.P. gas for shipment will be near Mont Belvieu and Beaumont, Texas, and near Lake Charles, Eunice, and Baton Rouge in Louisiana.

Terminals will be located near Baton Rouge, La.; Laurel, Miss.; Linden, and Roanoke, Ala.; Atlanta, Macon, and Waycross, Ga.; Greenville, S. C., and Charlotte, N. C.

The LPG market areas to be served by shippers using the new pipeline are: Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Florida, and Tennessee.

## Interstate Commerce controls private and contract shipments

Tougher penalties and new federal control of shipments of L.P. gas by truck are in effect.

In one of the few measures passed by the post-convention session of Congress, the Transportation of Explosives Act was extended to cover all private and contract carriers operating in interstate commerce.

Interstate Commerce Commission now has control of shipments of substances which are dangerous if not handled properly, although not actually classed as explosives. The law now covers interstate shipments by trucks privately owned by the shipper, or operated for the shipper under contract.

Private and contract L.P. gas trucks are not required to secure any special ICC license as a result. But they will have to comply with all ICC safety regulations under the explosives transportation law.

They will now be subject to the same fines as common carriers (up to \$10,000 and five years imprisonment for violations, compared with \$100 now).

Extension of the law was partly the result of an explosion last year of a private dynamite truck in Roseburg, Ore.

## Study indicates Canada to absorb own LPG by 1970

A recent study<sup>†</sup> by Stanford Research Institute has quelled fears that a glut of natural gas liquids would develop in western Canada. Some figured the advent of huge gas exports to the U. S. would pile up a vast surplus here.

Maximum and minimum figures for both supply and demand from 1960 to 1970 were used by the institute.

Here are the institute's principal conclusions:

Propane . . . demand in western Canada is expected to increase from 5700 bbl per day in 1960 to 23,900 bbl per day by 1970. The small demand for eastern Canada is a reflection more of a limited supply than of a limited market. There's a greater potential market for propane in that area and it could be served from western Canada if supplies were available.

Butane . . . production is expected to jump from 5300 bbl per day in 1960 to between 14,500 and 26,900 bbl per day in 1970.

<sup>†</sup>British American Oil Co. Ltd. requested the study.

Maximum supply conditions would leave some surplus for export by 1963. It does not appear that any markets studied will have enough butane deficit to absorb all the export quantities that would be available. It seems that fairly small markets can be developed in each market area.

#### **New process strips LPG from lean natural gas**

At the 43rd National Meeting of the American Institute of Chemical Engineers, four Phillips Petroleum Co. engineers, G. H. Dale, D. M. Haskell, H. E. Keeling and L. A. Warzel, revealed a new method for recovering petroleum products from natural gas.

The technique involves a short cycle adsorption process, which makes it profitable to treat gas containing as little as 0.1 gal. of liquid per 1000 cu ft. The chamber design, with internally insulated bed, makes it practical to heat up and cool down in a few minutes. This makes good recovery of low concentration materials possible using relatively small units.

The unit consists of two adsorption towers, a furnace to supply hot stripping gas, a gas pump to circulate the hot gas, and heat exchangers to cool and condense the material stripped from the bed.

#### **Appliance, accessory specs revised by American Standards**

Effective Jan. 1, 1961 are revisions and additions to 21 appliance approval and accessory listing standards. These revisions were adopted by the American Standards Association Sectional Committee Z21 at the AGA Laboratories' 72nd meeting in March.

The revised standards apply to all domestic appliances, commercial hotel and restaurant ranges, portable baking and roasting ovens, deep fat fryers and gas-fired counter appliances. In the accessory field, the revisions apply to manually operated gas valves, metal connectors for gas appliances and domestic gas conversion burners.

Approval requirements for gas water heaters will be available in three separate publications. One, Volume III, permits automatic water heaters to have an outlet water temperature of 190 deg. F.



## **NEWS BRIEFS**

**Maytag's Guaranteed Performance Appliance (GPA) program** was recently introduced to aid dealers in turning a problem into a profit. The program instructs dealers on how to organize and maintain reconditioning-marketing procedures for appliances. Maytag Co., Newton, Iowa, cites the problem of automatic washers being traded in on new ones. In the past, most trade-ins were wringer-washers, which were easier to evaluate, recondition, and sell.

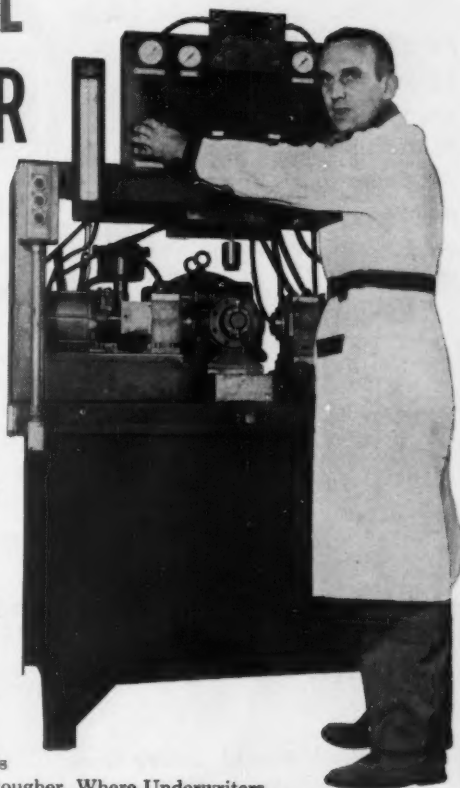
Articles of incorporation have recently been filed by the following companies: Northside Propane Co., Jerome, Idaho; Butane Propane Gas Service Inc., Cheyenne, Wyo.; Wolf Propane Co., Drummond, Okla.; Plarr's Bottled Gas Service Inc., Hamburg, N. Y.; and Buck's Petroleum Transport Inc., San Jose, Cal.

"The largest independent company specializing in natural gas and natural gas liquids" became a little larger in late summer when Union Texas Natural Gas Corp., Tulsa, agreed to purchase Anderson-Prichard Oil Corp. An integrated oil company operating in

# **NOT ALL BLACKMER PUMPS ARE PERFECT**

*Just the ones you buy!*

Now and then we build a lemon . . . but you'll never see it! Reason . . . the Underwriters' Seal of Approval isn't good enough for us. They only ask for spot checks, but we test every Blackmer pump before it leaves the plant. What's more, we make the tests tougher. Where Underwriters specify water pressure tests at 375 psi, Blackmer runs them at 1250 psi. In the gas pressure test, Underwriters say 250 psi, but Blackmer tests your pump at 300 psi. Yes, we build some bad ones, but the man on the test rack gets the headache . . . not you. In LPG pumps, your safest bet is Blackmer. Write for Bulletin 500.



"liquid materials handling"® equipment

# **BLACKMER** / liquefied gas pumps

BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN  
Find your Blackmer Man under "Pumps" in the Yellow Pages

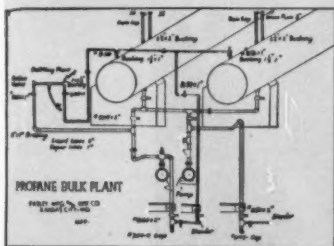
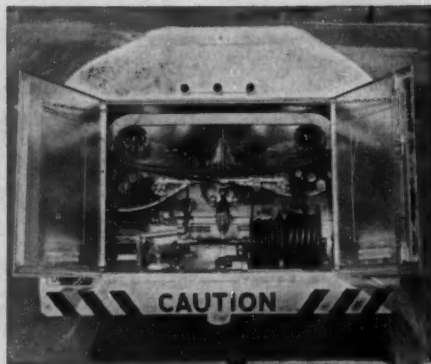


**Your One Supplier with everything in L. P. gas  
and Anhydrous Ammonia Equipment**



### "The Loadmaster" LPG Truck Tank

**PASLEY-DESIGNED** Truck Tanks (see above and right) were first to feature all controls from one location. **All operation is from one point—rear compartment.**



**BULK PLANTS** Pasley LPG and Ammonia type installations — a turnkey job or engineering for your own installation. Write, wire or call.

**Also a complete line of accessory equipment.**

## "Pastels By Pasley"

**COLOR—The Modern Trend!**  
Bring your LPG Equipment up to date. Available in the following colors . . . (write for information)

Blush Peach      Smoky Grey  
Sunshine Yellow      Seafoam Blue  
Mustard Lime      Wedgewood Green  
Eureka Orchid      Rose Beige  
Lake Blue      Desert Rose



EVERYTHING IN LPG AND ANHYDROUS AMMONIA

## The Pasley Mfg. & Dist. Co.

201 East 11th Street • Kansas City, Mo. • Tel. Victor 2-2362

### News briefs

the U. S. and Canada, Anderson-Prichard has two refineries, 1700 producing wells, and oil and gas leases on 77,000 productive acres.

**The world's largest mined-storage** tank for petroleum products will be filled with LPG by Nov. 1, completing a three-and-one-half-month job. The 22-million-gal. cavern at Shell Oil Co.'s refinery in Wood River, Ill., covers an area equal to two-and-one-half football fields. LPG stored in the \$2 million cavern will be used by the refinery for gasoline production. An adjacent cavern of half the size is being cut to store propane—for retail consumption.

**The Commonwealth of Pennsylvania** has awarded Hauck Manufacturing Co., Brooklyn, N. Y., a contract for 296 asphalt trailer kettles. The tubefired LPG-burning kettles have automatic temperature control and flame shutoff. The kettles will be used by the Department of Highways for maintenance operations throughout the state.

**Sinclair Oil & Gas Co., Houston**, expanded gas products plant No. 25 near Silsbee in Hardin County, Texas, to increase volume from 35,000,000 to 50,000,000 cu ft of gas per day. A company official reports the enlarged plant daily produces about 105,000 gal. of natural gasoline, propane, butane and other L.P. gases.

**The "Make Your Home Happier With a New Appliance"** pre-holiday promotion, sponsored by the American Newspaper Publishers Association, is being participated in this year by 336 newspapers through the U. S. and Canada. The purpose of the campaign is to show consumers how modern appliances make living easier and more enjoyable, to point out the achievements of the appliance industry in producing easier-to-use products, and to help promote pre-Christmas appliance sales from Nov. 14-26. Cooperating with the newspapers are appliance dealers, gas and electric utilities, department stores, and appliance manufacturers.

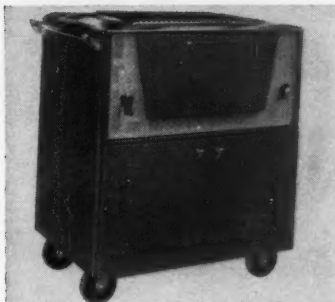
**The gas industry** is using supermarket grocery bags as advertising medium to reach a new audience, reports the AGA. The advertising message will receive attention in a controlled industry-selected market — local, regional or state-wide. The ads will be exposed when the bag is being packed, carried from the store, unpacked at home, and reused for another purpose.

**More news on page 71.**



◀ For further information on any items in this section use the convenient Univac Readers' Service postcards on pages 57, 58. ▶

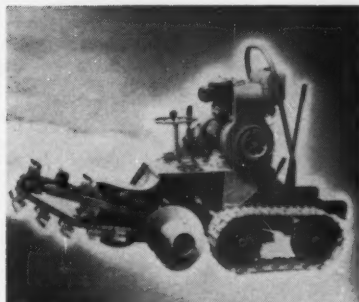
## New Products and Free Literature



### Barbecue fits inside or rolls outdoors

*Circle 1 on Readers' Service Card*

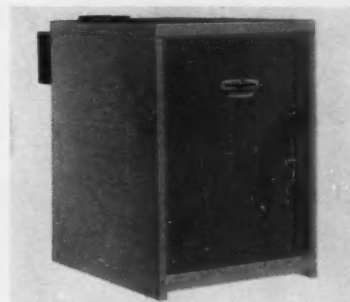
This new mobile barbecue grille (GEC 240) is both a portable and a built-in. As a built-in, the "Porta Kart" fits next to a base cabinet indoors. For outside cooking, it rolls out on ball-bearing wheels, two of which are swivel-mounted. The all-steel unit measures 36-in. high, 33¼-in. wide and 22½-in. deep. The Majestic Co.



### Crawler-mounted trencher provides extra traction

*Circle 3 on Readers' Service Card*

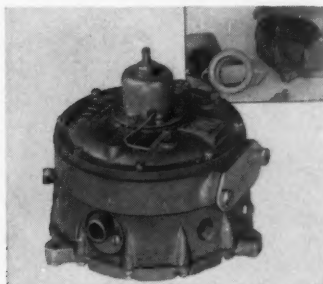
Trenchers (GEC 210) are now available in crawler-mounted types. They are well suited where traction is difficult to obtain and much maneuverability is needed. Models come in 9- or 12-hp sizes. The "Ditch Witch" is adapted to digging in frost and rocky soil because of its extra weight. Well suited for digging foundation footings. Charles Machine.



### Multi-use boilers can take add-on water heating coil

*Circle 5 on Readers' Service Card*

For industrial, commercial and residential use, this new compact cast iron boiler (GEC 410) comes in eight models ranging from 90,000 to 360,000 Btu input. It measures 35 in. high. All except the 90,000-Btu unit, have a provision for a tankless copper water coil for domestic use. Finish is two-toned green enamel. Peerless Heater.



### Carburetion converter spreads fuel freely

*Circle 2 on Readers' Service Card*

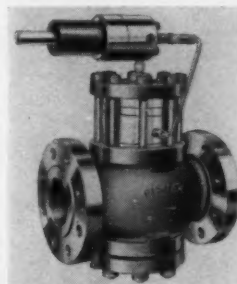
For medium and high horsepower engines (up to 350 hp) model M5 LPG converter (GEC 100) vaporizes 40 gph. Treatment of housing interior attracts fuel, allowing it to spread freely, counteracts surface tension, and boosts output. Century Gas.



### Infra-red burner has maximum heat wavelength

*Circle 4 on Readers' Service Card*

For low-temperature industrial processing applications, this adjustable infra-red burner (GEC 400) has maximum heat wavelength for all material. Face temperature of the 4- x 18-in. screen is 1200 to 1800 deg. F. Output—30,000 Btu. Bryant Industrial.

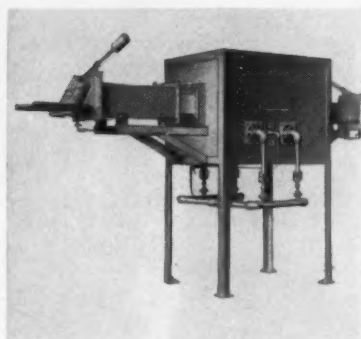


### Back pressure valves handle 100 to 450 psi

*Circle 6 on Readers' Service Card*

New piston-operated back pressure valves handle settings from 100 to 450 psi. Single-port valves (GEC 820) may be used where bubble-tight shutoff is needed. Come in 2-in. screwed or 2- through 6-in. flanged end connections. Fisher Governor.

## New products



### Atmosphere furnace handles small, diversified runs

Circle 7 on Readers' Service Card

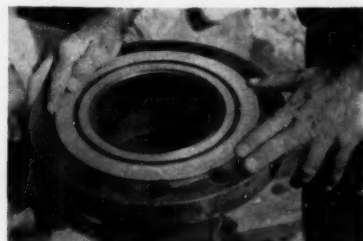
New tray-type atmosphere furnace (GEC 400) handles small pieces or diversified runs. Has direct connection without blower, compressed air or other piping. Charles A. Hones.

### Structural chimney installs quickly

Circle 8 on Readers' Service Card

A new all-fuel chimney is light weight, quickly installed, has a snap-lock joint, and is UL ap-

proved. The structural chimney (GEC 840) is available in brick, custom and economy styles. Comes in square or rectangular sizes and 2-, 3-, 4-, and 5-ft heights. Ameri-Vent Inc.



### Pipeline seal could stop truck explosions

Circle 9 on Readers' Service Card

The type of seal used on the new Mid-America Pipeline could prevent tragic transport explosions, such as the one that killed 11 people near Schuylkill Haven, Pa., in June 1959. That's the claim made by the manufacturer, Parker Seal Co.

Among the findings of the NFPA investigation of the accident was "a synthetic rubber gasket which reportedly had been used at the manway (in the rear head of the tank) was destroyed early in the fire, allowing LPG to leak and burn around this area. This concentrated heat surely adversely affected this portion of the tank." When the rear head failed, it sent the tank 1/4-mile in one direction and the truck cab and running gear nearly 500 ft in another direction.

As a result of the investigation, NFPA recommended that gaskets for LPG use should be of noncombustible material. But, says Parker, non-combustible type gaskets may have insufficient hoop strength to resist complete rupture.

Using the same process of elimination that Williams Brothers Co. used when it designed and built the Mid-America Pipeline, Parker says the answer to safely and effectively sealing both the world's longest LPG pipeline and a manway cover is the same—the "Gask-O-Seal."

This gasket (GEC-730) is said to provide an effective pressure-tight seal under normal conditions and a solid metal seal which completely excludes the possibility of a blowout failure. Under the very worst fire conditions it would allow only "a very slight seepage, and this would, for the most part, be due to the reduction of tensile strength of the bolts in the flange, thereby allowing a slight separation."



## Rochester Gauges has it!

World famous Rochester Gauges are performing the toughest jobs with trouble-free, rugged ease — day after day! Rochester's complete line of easy-to-read Criteria's, the larger Magnetrons, and compact Flow Indicators truly indicate that "Rochester Gauges the Industry."

**Demand** Rochester Criterion gauges on your next tank order or order direct from factory.



**ROCHESTER GAUGES, INC.**  
OF TEXAS

2425 CAROLINE • DALLAS, TEXAS

SALES OFFICES: DALLAS; ATLANTA; DENVER; ROCHESTER;  
LONDON, ONTARIO

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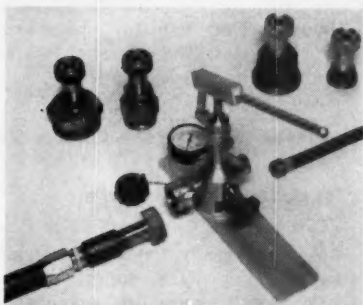
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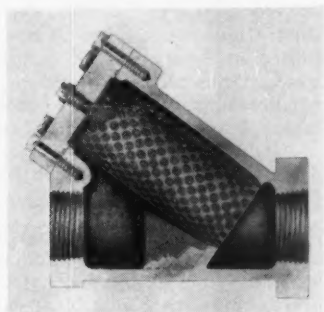
## New products



### Hydrostatic pump tests hose, piping and manifold systems

Circle 10 on Readers' Service Card

A new hydrostatic test pump (GEC 760) for LPG hose, piping and manifold systems, and pressure vessels has standard garden hose intake. Complete with built-in ball check valves, its shut-off valve locks pressure in the system. A 1000 psi gauge on the discharge side of the shut-off permits a pressure reading at all times. Meeder Equipment Co.



### L.P. gas system strainer protects all pumps, meters

Circle 11 on Readers' Service Card

New strainers for protecting all pumps and meters in LPG systems feature malleable iron cases. Working pressure is 600 psi and test pressure is 2000 psi. Bolted-steel flanged openings to screen compartment have semi-permanent O-ring gaskets. For inexperienced personnel, the screen is guided to its seat easily and automatically after cleaning. Sizes range from 2-by 2-in. to 3-by 3-in. (GEC 350). Smith Precision.

### Cylinder enamel dries from 20 to 30 minutes

Circle 12 on Readers' Service Card

New quick-drying, abrasion-resistant and chip-proof cylinder enamel (GEC 610), for commercial gas cylinders, is now available. It may be applied with a brush, spray or roller. Drying time to handling

# NOTHING

heats like...  
is more modern than...  
is more economical than...

# GAS

NO BLOWER OR POWER NEEDED

## BUZZER

REG. U.S. PAT. OFFICE

JUST CONNECT TO GAS SUPPLY

### INDUSTRIAL GAS BURNERS & FURNACES

Using Only Low Pressure Gas  
for Clean, Fast, Quiet Heat-Up at Lowest Cost!

**BENCH TYPE OVEN FURNACES** for heat treating and pre-heating. Temperatures to 2000° F.

**PIPE BURNERS** for even heat distribution in any capacity.

**NOZZLE BURNERS** for all capacities up to 1 1/4 million BTU's.

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Write today for complete "BUZZER" CATALOG

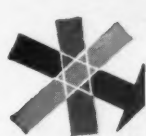
Est. 1911

## CHARLES A. HONES, INC.

133 So. Grand Avenue, Baldwin, L.I., New York • Baldwin 3-1110

"BUZZER" Burners & Furnaces for Heat Treating, Melting, Soldering

# GO MODERN



install

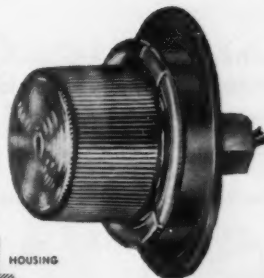
## WARREN SNAP SEALS

### the VAPOR-PROOF SAFETY LAMP

(conduit optional)

Today's lamps must comply with ICC and SAE standards, to meet high safety requirements on modern highways ... stay modern with Warren Snap Seals ... "internal O" ring sealed lens.

'lens pries off'



MODEL B-50A

# BETTS



MACHINE COMPANY  
WARREN, PENNSYLVANIA

manufacturers of Warren emergency & manifold valves

For further information on these products use Readers' Service Cards on pages 57, 58

is from 20 to 30 minutes, eliminating costly waiting time. The enamel comes in a wide variety of colors. Literature is available free upon request from the manufacturer. Farboil Co.

**3000-lb fork lift has  
70-in. turning radius**

*Circle 13 on Readers' Service Card*

New design features of the Yale G154 LPG fork lift (GEC 485) are: compactness, a 70-in. turning radius on the cushion tire 3000-lb model, lifting speed of 75 ft per

minute (loaded), I-beam mast construction. Pneumatic tire model has two-speed range transmission. Yale & Towne.

**Finned tube radiation mounts  
on wall, floor, under window**

*Circle 14 on Readers' Service Card*

New finned tube radiation (GEC 410), for commercial steam and hot water heat, mounts on walls, floor, or under windows. Tubing is annealed copper for saturated steam pressures to 100 lb per sq in., up to 330 deg. F. Aluminum

fits in 3- or 4-in. sizes. Radiates 1900 to 2760 Btu for steam and 1010 to 3460 Btu for hot water. Modine.

**FREE LITERATURE**

**Truck leasing literature**

*Circle 15 on Readers' Service Card*

A new study, analyzing truck fleet leasing plans, compares that cost with company ownership. "Truck Fleets: Lease or Buy? An Analysis of Truck Transportation Costs" is based on data from corporations operating 12,817 company-owned trucks and records of national leasing companies (GEC 790). Foundation for Management Research.

**Refrigerated storage brochure**

*Circle 16 on Readers' Service Card*

An eight-page brochure describes the design and function of refrigerated facilities for LPG storage between -50 deg. F. and 32 deg. F. Illustrations include vessels now in service and cutaway drawings of vessels types with descriptions of refrigerating systems. Chicago Bridge & Iron (GEC 690).

**Literature on salamanders**

*Circle 17 on Readers' Service Card*

A leaflet describes LPG heaters and salamanders ranging from 35,000 Btu to 200,000 Btu. Other LPG equipment, such as heated asphalt rollers, tool heaters, water heaters and asphalt kettles, is shown. (GEC 410). Aeroil Products Co.

**Brochure on built-ins**

*Circle 18 on Readers' Service Card*

Illustrated literature delineates the design and operating features of the new Universal built-in gas ovens and ranges (GEC 240). The four-page folding brochure contains installation specifications also. Waste King.

**Manifold, regulator catalog**

*Circle 19 on Readers' Service Card*

Oxweld industrial gas regulators and portable manifolds (GEC 870) are described and illustrated in a 16-page catalog. The literature gives specifications and ordering information for all types. Linde Co.

# WITH BEACON YOU GET

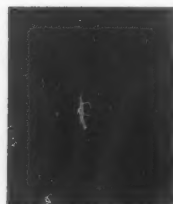
## Built-in Protection



## and here's why

A contract with Beacon protects you from haphazard delivery schedules, frayed nerves and lost customers. Prompt deliveries and ample supplies are yours the year 'round when Beacon is your L.P. Gas supplier.

Call, write or wire Beacon Petroleum Company for further information.



**BEACON**  
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BUTANE-PROPANE News

# SEE WHY THESE PUMPS CUT BULK TRANSFER COSTS !

## SPECIAL DESIGN FOR HANDLING LP-GAS

Close tolerances give high efficiency.

Direct connection to standard electric motor —  
saves speed reduction costs.

Longer life — no service attention needed.

Easy to pipe — have straight through flow.

Safest, most trouble-free mechanical seal.

Superior construction — top efficiency maintained longest.

Exchange pump plan — no time lost from service.

Pumps expertly repaired and tested.

Underwriters' or standard models available.



For delivery truck service  
where flexibility is desirable.  
20 GPM at 500 RPM or  
35 GPM at 900 RPM  
model TC-H



For average  
truck service  
50 GPM model TC-2  
Flanges Available



For "high flow"  
delivery truck service  
100 GPM model TC-3  
Flanges Available

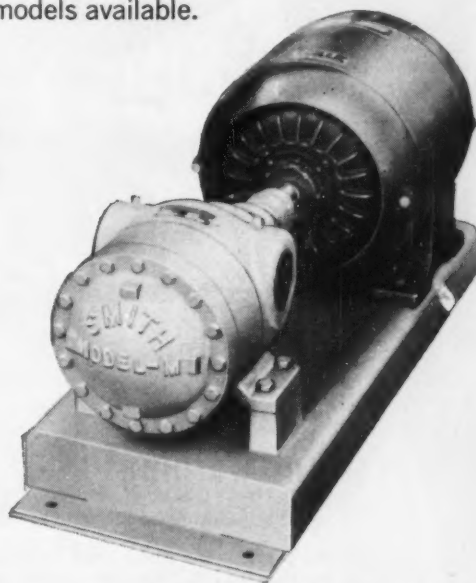


For trucks with  
automatic transmission  
50 GPM model ATC-2  
100 GPM model ATC-3

### MORE FUEL DELIVERED FASTER AT LESS COST!

Flanges optional  
at less cost than unions.

Our ads  
never stretch the truth,  
just your dollar



MUrray 2-2293 and MUrray 2-2691

**PRECISION PRODUCTS COMPANY**

1135 Mission Street, South Pasadena, California

Southeastern Distributor: Pond-Johnston Inc. Warehouses in Mobile, Ala.; Jacksonville, Fla.;

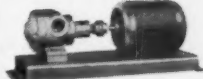
Western States Distributor: Teeeco Products, Inc., 3920 West Burbank Blvd., Burbank, California.



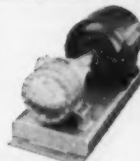
Will fill all small tanks  
as fast as any larger pump.  
100-lb. cys. in 4 minutes or less.  
20-lb. cys. in 1 minute or less.  
fork lift tanks no problem.  
10 GPM models EC-1, EG-1,  
MC-1, and GC-1.  
15 GPM model EC-N.



For small volume transfer work.  
20 GPM model MC-1044  
35 GPM model MC-1044H



For medium volume transfer.  
50 GPM model MC-2  
or MC-2Q (higher pressure,  
quiet running)



For large volume transfer  
100 GPM model MC-3  
Flanges Available



For high capacity loading  
150 GPM model MC-4



## PEOPLE

**MORRIS ROTHMAN** has been appointed industrial representative for Suburban Propane Gas Corp., Whippany, N. J., in metropolitan New York and Long Island.

**WALTER M. ENOCH**—from senior salesman for Minneapolis-Honeywell Co., to sales management assistant at Bryant-Hedback Co., Indianapolis LPG equipment dealer.

**JAMES F. DONNELLY JR.**—From supervisor of sales promotion to manager of advertising and sales promotion for the Permaglas division of A. O. Smith Corp., Kankakee, Ill.

**F. J. O'DONNELL** has been appointed sales representative for Wolverine Tube's copper, copper alloy and aluminum tube. He head-

quarters in Long Island City, N.Y.

**P. E. GRAY JR.**—from sales engineer to customer technical services, supervising domestic and industrial L. P. gas sales for Sinclair Oil & Gas Co., Tulsa. **W. L. SPLETH**—from sales representative to sales engineer in charge of refinery and chemical sales of natural and L. P. gas. **ROBERT L. THORNBURY**—from manager of an LPG terminal in Indiana to sales engineer for LPG in Indiana and Michigan.



**clear sailing  
through a  
storm warning!**

When a predicted storm casts its ominous threat over the country-side, the LPG distributor is one person who knows he and his customers will have smooth sailing through the worst weather.

Because one glance at his Visible Master gauge assures him that sufficient fuel levels are on hand to supply all his customers' needs. Their well-being in any kind of weather is mirrored in its dependable face.

This man and the hundreds of homemakers, farmers, truckers and all others who depend on him know they can place their trust in Visible, because Visible means years of accurate, dependable performance . . . performance that has made the Taylor Visible gauge the largest selling LPG and NH<sub>3</sub> float gauge in the world . . . the "Standard of the Industry."



1213 SOUTH AKARD • DALLAS



**P. E. Gray Jr.**  
Sinclair



**W. L. Speth**  
Sinclair



**R. L. Thornbury**  
Sinclair



**D. P. Faulhaber**  
Robertshaw-Fulton

**DONALD P. FAULHABER**, formerly in Robertshaw Fulton's International division, has been appointed eastern sales representative for the Grayson Controls division. He will have headquarters at Haddonfield, N. J.

**B. D. WIESMAN** has been appointed sales promotion manager for RCA Whirlpool refrigerators and freezers. He succeeds **QUENTIN B. GARMAN** who was recently promoted to the position of national advertising manager.

**LOUIS G. BURKHART** has been appointed district sales manager for Welbilt Air Conditioning and Heating Corp.'s complete product line. His territory includes western and upstate New York, eastern Ohio, and northwestern Pennsylvania.

**KIRK P. HARGER** has been appointed eastern sales manager, steel products division of Kerotest Manufacturing Co., Pittsburgh. He will work out of New York.



THOMAS J. MCGURN, formerly with Cities Fuel Corp., Fresno, Cal., has been appointed manager of the wholesale division in Fresno for Algas Fuel Service Inc. McGurn was president of the Western Liquid Gas Association last year. ROBERT D. BECKER JR.—from sales manager to vice president of the carburetor division of American Liquid Gas Corp., Los Angeles, Cal.



R. P. Erickson  
Tuloma Gas



T. J. McGurn  
Algas Fuel Service

CHARLES O. PEYTON—from petroleum specialties department to manager of industrial and consumer sales for Esso Standard, New York. The promotion consolidates the two departments. He succeeds CHARLES W. BOHMER, who is now assistant to the vice president and director of marketing.

RICHARD P. ERICKSON—from regional sales supervisor in the Yorktown, Va. office of Tuloma Gas Products Co., Tulsa, to head of a new Northeast regional sales office. D. E. HINCHMAN replaces Erickson in the Yorktown office.

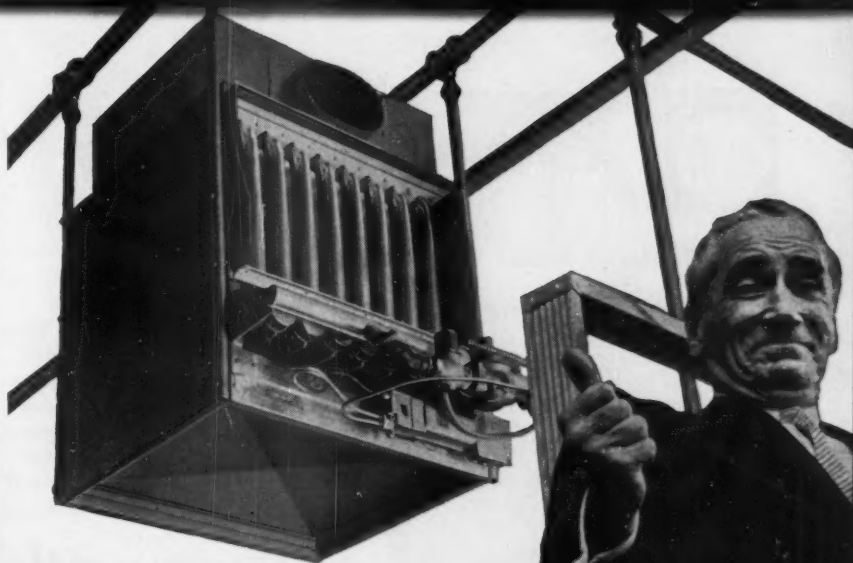
ARNOLD H. BUEHL has been appointed director of engineering for Hotstream Heater Co., Cleveland.

JOSEPH E. ZWIT—from central regional manager to sales manager for Hauck Manufacturing Co.'s engineering division, Chicago.

RICHARD L. WHITE—from Philadelphia district manager to eastern division manager of the Blackmer Pump Co., Grand Rapids, Mich.

C. T. PERKINS has retired as president of Modine Manufacturing Co., Racine, Wis. He will continue as a member of the board of directors and was named vice chairman. A. G. DIXON, executive vice president, was elected president.

C. A. "CAP" PHELAN, manager of Shell Oil Co.'s Los Angeles LPG marketing division retired after 38 years with Shell.



Sell more "tough buyers" with Reznor

## REZNOR DUCT FURNACES

### keep installation and maintenance costs low

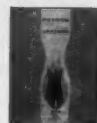
*These features make Reznor furnaces more adaptable, cut installation time and costs:*

- mounting pipes at all four corners permit easy suspension or base mounting;
- double-lip flange simplifies air-tight connections;
- air can flow through heat exchanger in either direction;
- controls can face each other when heaters are in tandem;
- built-in draft diverter is reversible;
- flue collar is interchangeable for horizontal or vertical installations.

*These features insure long-run economy, easy maintenance:*

- Reznor furnaces have long-lasting, corrosion-resistant aluminumized or stainless steel heat exchangers and non-clogging steel burners, easily accessible from front or rear;
- every furnace is flame-tested and shipped complete with U/L approved controls.

Whatever system you're planning—central heating, year-round air conditioning, make-up air, process air—Reznor fills any requirement. Heaters may be used singly in capacities up to 300,000 Btuh, or in tandem or side-by-side arrangement for greater heating requirements. Reznor blowers available. Ask your Reznor distributor for Catalog SA-5900. Or write Dept. 4-J, Reznor Manufacturing Co., Mercer, Pa.



## REZNOR HEATERS

"WORLD'S LARGEST SELLING DIRECT-FIRED HEATERS"

## Completing most successful year, Ohio LPGA names Grabiell president

WITH MEMBERSHIP, TREASURY FUNDS, and activities at all-time highs, Ohio LPGA entered its 12th year in mid-September at its annual election meeting in Columbus.

Floyd E. Grabiell, owner of

Youngstown Propane Inc., Canfield, was unanimously elected to the presidency after serving as vice president. He succeeds C. Denver Lamp, who became chairman of the board of directors.

The vice president's chair was filled by Robert J. Ayer, Ayer Gas Service & Appliances, Batavia. A director for two years, Ayer chaired the association's most successful convention and trade show this year and has agreed to handle the job again in '61.

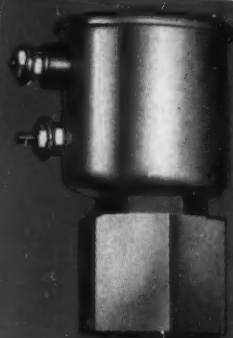
Other new officers elected include Secretary Freeman R. Dick, Belgas Service, Bellfontaine, and Treasurer Curt Mosher, Bayless LP-Gas Service, Damascus. New directors are: John T. Holden, Holden's Gas & Appliance Co., North Fairfield; Terry O'Loughlin, Anderson Bottled Gas Co., Sylvania; Kermit Stroh, Moulton Gas Service, Wapakoneta; Robert L. Littleton, Evergas Inc., Bridgeport; Walter T. Lynch, The Wright Gas Co., Georgetown; and Arnold E. Muth, Suburban Propane Verkamp Co., Cincinnati.

Among the achievements of the association during Lamp's tenure, its 11th year, are:

- A 15 per cent increase in membership, up to 115 from 100.
- An approximately similar percentage increase in convention-trade-show profit, more than doubling the 1958 total.
- Establishment of a code committee to aid in revising the Ohio Code, Pamphlet 58. Much work has been done, but the project is still far from completion.
- A three-day service school was held at Ohio State University.
- A group life insurance plan was provided and has proved helpful in increasing membership.
- Two copies of the NFPA film, "LP-Gas Fire Control," were purchased, one for association use, the other for the state library, to be used by various state departments under the state fire marshal's supervision.
- A county-by-county redistricting survey was made to determine whether the present association districts should be increased from four to sixteen. Although study indicated the reorganization was unnecessary, the

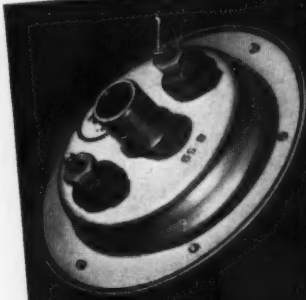
## NEW! LPG VALVE and SAFETY SWITCH by McQUAY-NORRIS

FOR ORIGINAL EQUIPMENT AND REPLACEMENT USE



### LPG ENGINE VALVE

- UL listed for Butane and Propane
- Corrosion-proof brass housing
- For either 6-V. or 12-V. units
- Available in either 'straight' or 'right-angle' design
- Supplied with mounting brackets and electrical connections



### LPG SAFETY SWITCH

- UL listed for LPG Gas Engines
- Easy to install, easy to connect
- Foolproof design—controlled by engine vacuum
- Shock and vibration resistant
- Withstands extremely high or low temperatures



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ELECTRIC PRODUCTS DIVISION, ST. LOUIS 10, MO.

50 YEARS IN THE MANUFACTURE OF PRECISION PRODUCTS

**Sprague**  
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**GAS METERS**



For  
**ACCURACY**  
**DEPENDABILITY**  
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Model 175-220

**THE SPRAGUE METER CO.**  
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**Broyhill**

**HANDI-HEATER**  
**Keeps Stock Tanks**  
**ICE-FREE**



**Fits Any Tank**  
**Lights Quickly**  
**and Simply**

Stock BROYHILL HANDI-HEATERS for increased sales and for customer satisfaction. Operates from bottle gas. AGA approved Automatic Shut-Off and Temperature controls. Sell BROYHILL Stock Tank Heaters—performance proven on thousands of farms.

the **Broyhill** COMPANY DAKOTA CITY, NEBRASKA

survey proved invaluable as a membership - increasing tool.

The association is now getting to work on its 1961 convention and trade show, scheduled for April 16-18, again at the Sheraton Gibson Hotel in Cincinnati. Although the event is nearly a half-year away, booth reservations have already exceeded the total number sold in '60. Looks like OLPGA is out to break all its brand new records!

#### Turner re-elected to head Florida LPGA

R. E. Turner, Green's Fuel of Florida Corp., Sarasota, was re-elected president of the Florida LPGA. The 1960 convention, held Sept. 13, had a membership attendance of 214.

These officers were elected for the ensuing year: T. H. Slade Jr., Slade Gas Co., Jacksonville, vice president, and C. W. Bove, Bove's Bottled Gas Inc., Fort Lauderdale, secretary-treasurer.

"How to Keep Unions Out of Your Business" was the title of a talk presented by attorney Granville M. Alley. Professor E. R. Bollinger Jr., Bloomington, Ind., spoke on "Records and Records Analysis."

#### Foreign LPG industry topic at Iowa convention

Lake Okoboji was the scene for the fourth annual Iowa LPGA convention, Sept. 23-25. Attendance totaled 160.

Guest speaker, Jim Williams, Weatherhead Co., discussed problems of the LPG industry outside the U. S. and showed the potential of this expanding market for LPG utilization equipment and appliances.

In many countries, he related, the government is in the LPG business and competitive prices are non-existent. Consequently, stabilized prices are much higher than those in the U. S.

The date approved of for the Iowa L.P. Gas Industry Conference was Dec. 12.

Expansion plans were launched by the Arkansas LPGA Sept. 17 when open house was held at new Plaza Towers offices. The new headquarters are at Markham and University streets in Little Rock. This move will assist the association in its 1961 expansion program, by supplying enlarged facilities.

#### Why LP Gas Dealers Switch to **HYDROTHERM** Gas Boilers



#### TRY THIS TEST . . .

and see the advantages of **HYDROTHERM'S** HORIZONTAL boiler sections

This simple experiment shows how HYDROTHERM horizontal, cast-iron boiler sections trap more heat — deliver greater value per LP gas dollar. Hot gases ascend along a tortuous, zig-zag path between successive, staggered rows of deep-ribbed boiler tubes — just as cigarette smoke (and heat) travel upward through the staggered fingers of your hands.

The way to sell more LP Gas in today's market is to sell HYDROTHERM . . . it's easy to show why HYDROTHERM transfers 40% more heat per pound of cast-iron than boilers having vertical sections — why it delivers low fuel consumption, quick heat response without override, uniform heat transfer, self-cleaning flue passages, and more compact design.

When your customers see for themselves . . . they'll ask for HYDROTHERM — and you'll sell more gas. Send for the HYDROTHERM Catalog today!

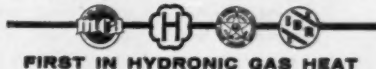
#### 11 SIZES FOR ACCURATE LOAD MATCHING

HYDROTHERM offers the most complete line of residential, gas-fired, hydronic boilers available. There are 11 sizes from 50,000 to 300,000 BTU/hr. input, for accurate load matching and maximum performance. They are factory assembled, complete with burner and the finest gas controls, for rapid, trouble-free installation.



DEPT. 138P

NORTHVALE, NEW JERSEY



FIRST IN HYDRONIC GAS HEAT



# Fibreboard producer switches to LPG for health reasons

*No more CO poisoning for Connelly's  
fork lift operators*

WILLIAM T. HARPER • Eastern Editor



It's dark in there! And stuffy, too; and when Connelly Containers was using gasoline, the drivers were sometimes overcome by the carbon monoxide fumes. Here a load of finished product is put aboard one of the railroad cars, which are brought right into the building.

## A BPN Exclusive

TOM FINNEGAN MAKES NO BONES ABOUT IT. "The main reason we switched to propane was for health reasons!"

Finnegan is fleet superintendent for Connelly Containers Inc., a leading independent corrugated fiberboard producer. And the "switch" he talks about is the one that changed his 19 lift trucks from gasoline to propane carburetion.

Connelly Containers, located in Lower Merion Township just outside of Philadelphia, employs about 400 people. The firm operates 24 hours a day, five days per week turning out an estimated 60-70 million board feet of corrugated board (boxes) per month. Occupying a 20-acre site, it accounts for a large volume of freight car shipments. It has facilities for handling 24 such cars under the roof within the plant. It was the work done in the freight cars that first got Finnegan interested in propane as a fuel for his lift truck fleet.

"When we were operating on gasoline," he recalls, "there were times when we had to go into one of those freight cars and pull a lift truck operator out. They were being knocked out by the carbon monoxide fumes in the gasoline."

So, Finnegan started thinking about using propane as his fuel. Before joining Connelly, he had worked in a similar job at a Philadelphia meat packing plant. There



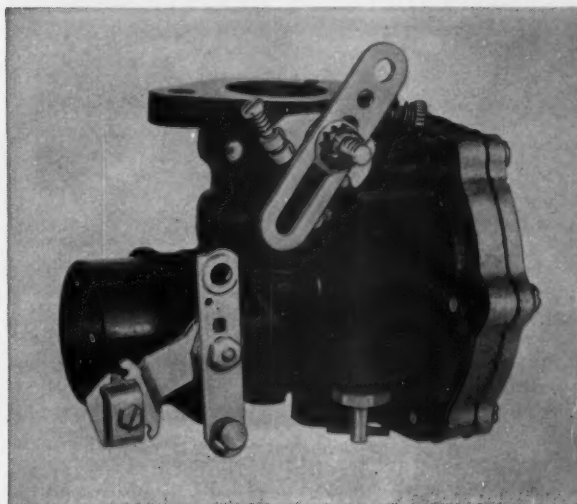
*Bendix announces* **TWO**  
**GREAT NEW COMPONENTS FOR**  
**ZENITH LP FUEL SYSTEMS**

**1**

**ZENITH  
PRESSURE  
CARBURETOR**

Greater safety and efficiency in fuel control are built into this new Zenith® LP carburetor. In its development, our engineers drew upon their wide experience in other fields of carburetion—particularly aircraft pressure carburetion, where Bendix patents exist. The new LP models offer many advanced features: Both fuel economizer and final regulator are built in. The carburetors are fully balanced, can have fixed or adjustable fuel metering, and are simple to service. Two sizes available: 1" S.A.E. (Model PC 1-8) and 1¼" S.A.E. (Model PC 1-10).

**ZENITH SUPPLIES MORE LP GAS CARBURETORS FOR ORIGINAL EQUIPMENT THAN ANY OTHER MANUFACTURER.**



**2**

**ZENITH HOSE LINE  
UNIVERSAL VAPORIZER**

As the high-performance companion to the new pressure carburetor, we have designed a new hose line vaporizer. It mounts in any position in upper or lower radiator hose. For additional capacity on large engines, vaporizers can be mounted in both hoses. The unit, including the head, is cast from aluminum for light weight. The casting includes a pad for bracket or brace support in mounting.

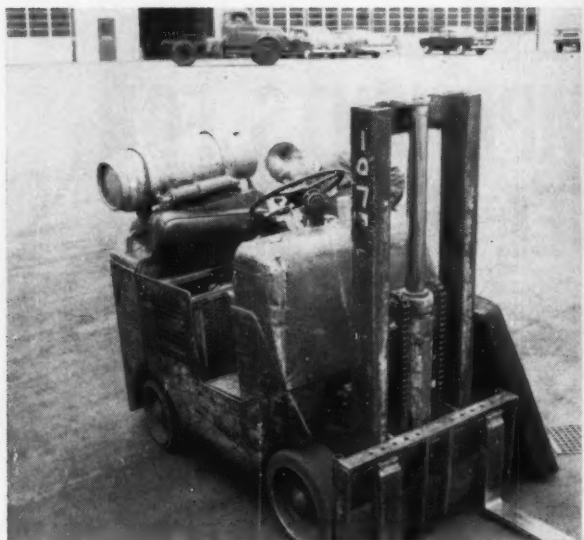


Write for information on Zenith's LP Gas Carburetor School

**Zenith Carburetor Division**

696 HART AVENUE, DETROIT 14, MICHIGAN

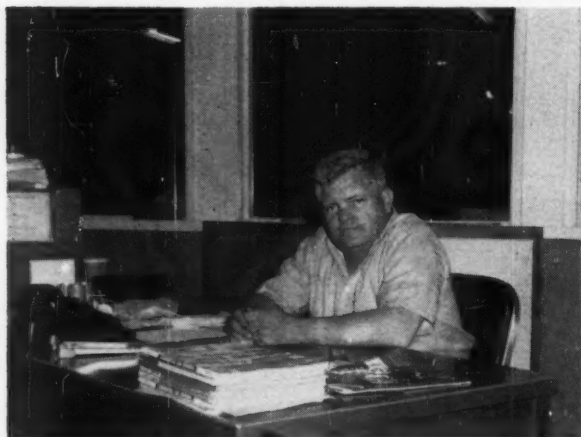




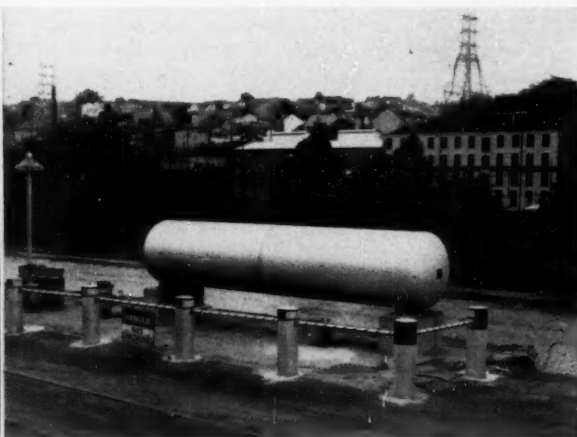
One of Finnegan's mechanics works on a lift truck during its 50-hour check. The inspection consists of cleaning the truck, the air and gas filters and cleaning and adjusting the plugs. He checks the oil pressure, fuel lines and carburetor linkage, the generator, fan



belts, the ignition system, the battery, cables, the hydraulic system and the cooling system. A compression test is given the cylinders also. Right, a lift truck operator delivers a load of corrugated board to one of the stitching machines.



Fleet superintendent Tom Finnegan sits at his desk in his office which is to the rear of the shop where the lift trucks are serviced.



Connelly leased this 1700-gal. LPG storage tank from Ugite. Foundation work and plumbing were all done by Connelly.

the company used L. P. gas for some of its food processing. With that in mind, he contacted some of the major liquefied petroleum gas suppliers in the area and told them of his problem. Each sent representatives out to talk with Finnegan. So did the Industrial Lift Truck Co. and the Towmotor Corp. people as well as Ugite Gas Inc. (then Art Bone's Eastern Propane Co.).

Industrial Lift Truck Co. did the first conversion, on a trial basis,

in 1958. Then, via night training classes put on by Industrial and Ugite, Finnegan's crew of eight mechanics learned how to make conversions themselves.

Before the first conversion was made, Connelly had been using gasoline for eight years. During that time Finnegan reports, "the average life of a lift truck was about six months before they started spouting oil so badly that you couldn't stay near them." This was partly because of the extremely

hot conditions under which they worked.

The company uses its lift trucks in various methods around the plant. Four of them—12,000 lb capacity clamp lift trucks—are used to handle 86- x 60-in. rolls of kraft paper, each one weighing 6500 lb. These rolls are stacked three high in the warehouse. Two Towmotors are used to take the finished product from the company's two corrugating machines (each about 200 ft long) to storage. They are also

used to feed the press department. Two others, Yales, are used in the production department for the feeding, stitching and gluing operations. The rest of the trucks are used in the shipping and receiving departments and to put the materials on conveyor belts.

These units, when converted, ranged in age from 18 months to five years. Finnegan purchased his carburetion equipment from Ugite, and used Beam and Marvel-Schebler units. No changes in the engine manifoldings were made during the conversions. Each truck, equipped with an engine-operating hour gauge, is pulled into the shop for a 50-hour check.

With the safety hazard licked by the use of clean-burning, total-consumption propane carburetion, Connelly started reaping added benefits. For instance, the company found that the cost of propane was roughly five cents per gal. less than gasoline. To convert this into the valued dollars-and-cents savings, let's view one month's operations. In this case we'll use the figures for May, 1960. These will be conservative as the month of May is normally a "slow" one in this industry.

During May, the company had 14 trucks operating a total of 3509 hours, an average of 250 hours per truck. (Finnegan estimates they usually operated about 400 hours per month in normal periods.) The trucks, during these 250 hours, used 4486 gal. of propane, an average of 320 gal. per truck.

Consumption of gasoline, on the other hand, because of this fuel's higher thermal value, averages about nine per cent less, according to Ugite. Therefore, the same travel would require 294 gal. of gasoline.

The five-cent difference in price, partially offset by the greater gallonage, gave Connelly a net per-vehicle saving of \$10.54 for the month. For the 14 vehicles, the aggregate saving was \$147.56. Project these figures over a year, and you come up with a saving of \$1770.72. This, however, is ultra-conservative. May was a "slow" month—not a normal one. Additional savings were realized by oil consumption.

Connelly, like so many others who have switched to propane carbure-



**350 H. P.  
M-5  
CONVERTER**

### ...FOR MEDIUM AND HIGH H.P. ENGINES



#### 350 H.P. CAPACITY PLUS

New internal design features including special surface treatment of aluminum housing permits this high H.P. output



#### ONLY 6 INCH IN DIAMETER

New space saving advantages. The M-5 is the smallest size converter of this capacity available



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A newly designed compound leverage system provides high sensitivity without increasing size of diaphragm



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FEATURES . . . WRITE  
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### The Safe Hose Nozzle

Available with Fixed Acme or P. O. L. Adaptors

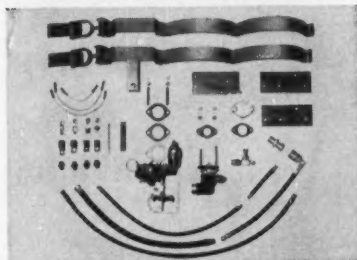
For information ask

**PARKHILL-WADE**

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# BEAM LP Gas CONVERSION SYSTEMS



**CLARK...  
...TOWMOTOR  
HYSTER...  
...YALE & TOWNE  
and all others**

Whatever the make and model, whatever the brand and size of engine — BEAM'S ready-to-install systems have everything you need to convert your fork lifts and tow trucks to clean-burning, inexpensive LP-Gas.

**First WITH THE  
FINEST**

For over 20 years Beam has been "out-front" with the latest ideas in LP-Gas Carburetion Equipment. You'll find that Beam's line of carburetors, regulators, filters, and installation systems not only do the job better and faster, but they are also much more compact and easier to install.

**CONVERT WITH BEAM**

Write today for complete details, specifications and recommendations for your equipment.

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## Connelly Containers

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF LABOR AND INDUSTRY BUREAU OF WORKMEN'S COMPENSATION HARRISBURG, PA.		<b>COPY</b> <b>EMPLOYER'S REPORT OF INDUSTRIAL INJURY</b>		Case Number: <b>0157-15099</b>
<b>INSTRUCTIONS</b> Reports of industrial injuries must be filed with the Department of Labor and Industry within 48 hours for every injury resulting in death, and within 15 days after the date of injury for all other injuries covered by the Workmen's Compensation Act, except those resulting in disability continuing less than the day shift or turn in which the injury was received. Every question must be answered fully. One copy of this report must be sent to your insurance carrier.				
<b>EMPLOYING CONCERN</b> (1) Name: <b>Connelly Containers, Inc.</b> (Give complete name, including department or business) (2) Office address: No. and Street: <b>Manufacture of Composite Shipping Containers</b> (City and Country) (3) Nature of business: <b>Manufacture of Composite Shipping Containers</b> (4) Place where accident occurred: <b>Pennock, Mont.</b> (City and Country) (5) Date of accident: <b>11-26-57</b> (F) Hour: <b>A. M.</b> (G) Hr. injured began working: <b>12:00 P.M.</b> (6) Date disability began: _____ (H) Was injured paid in full for the day? <b>Yes</b> (Yes or No)				
<b>INJURED EMPLOYEE</b> (1) Name: <b>George Slater</b> (First Name) (Middle Initial) (Last Name) (2) Address: No. and Street: <b>688 Windsor Ave.</b> (City and Country) (3) Age: <b>32</b> Date of Birth: _____ (4) If under 18, did you have on file an employment Certificate: (Yes or No) (5) Number of Certificates: _____ (6) Occupation for which issued: _____ (7) Check ( # ) Married: <b>X</b> Single: <b>X</b> Main: <b>X</b> Female: <b>X</b> U. S. Citizen: <b>X</b> (8) No. children under 18 yrs.: _____ (9) Compensation: <b>Operator</b> (10) How long employed at occupation at which injured: <b>4 mos.</b> (11) Number of hours worked per day: <b>8</b> (12) Number of days worked per week: <b>5</b> (13) Wages: Per Hour \$ <b>1.72</b> Per Day \$ _____ Per Week \$ _____ Board or Lodging: _____				
<b>CAUSE OF ACCIDENT</b> (14) What was employee doing when the accident occurred? <b>Unloading rolls of stock paper from a roll car.</b> (Describe briefly as loading truck; operating a drill press; shoveling dirt; painting with spray gun, etc.) (15) What machine, tool, substance or obj. was most closely connected with the acc. <b>Carbon monoxide fumes.</b> (Name the machine, tool, appliance, gun, liquid, etc. involved) (16) If machine or vehicle, what part of it? _____ (State if gear, pulley, motor, etc.) (17) How did the accident happen? <b>Employee was apparently overcome by exhaust fumes from jitney.</b> (Describe the accident fully, stating whether injured person fell or was struck, etc. and all factors contributing to the accident. Use other side for additional space.) (18) Was the machine, tool or object defective in any way? <b>No.</b> (19) If so, how? _____ (20) Could the accident have been prevented? <b>Possibly.</b> (21) How? <b>Leaving out of car with jitney as quickly as possible.</b> (Specify by illuminating, ventilating, repairing, providing goggles, etc.) (22) Were mechanical guards or other necessary safeguards (such as goggles) provided? _____ (23) Was injured using them? _____				
<b>NATURE AND LOCATION OF INJURY OR OCCUPATIONAL DISEASE</b> (24) (Describe in detail the nature of the injury or occupational disease, and the part of the body affected. For Example, sprain of right arm, crushing injury to chest, affected respiratory tract, skin infection, etc.) <b>Carbon monoxide poisoning.</b> (25) Attending physician and hospital: <b>Widener Memorial Hospital, Bridge &amp; Dector</b> (Name and address) (26) Has employee returned to work? <b>No.</b> (27) If so, give date: _____ (28) At what wage? _____ (29) Did injury result in death? _____ (30) If so, give date: _____ (31) Did the employee have the loss or loss of use of any member before accident? _____ (If so, describe the part of the body affected)				
<b>INSURANCE CARRIER</b> (32) <b>PENNSYLVANIA MANUFACTURERS' ASSOCIATION CASUALTY INSURANCE COMPANY</b> 1009 FINANCE BUILDING, PHILADELPHIA 4, PA. (33) Date of this report: <b>November 28, 1957</b> Made out by: <b>Personnel Manager</b> (Official position) Policy No. _____ Do NOT WRITE IN THESE FOUR SPACES _____ Chain No. _____ (See instructions on other side)				

This Employer's Report of Industrial Injury was typical of those handed in at Connelly before the switch to L.G. The jitney operator was unloading rolls of paper inside a rail car. He was overcome by exhaust fumes and was stricken with carbon monoxide poisoning.

tion, is also realizing huge savings in maintenance costs. According to Finnegan, the company "has run the converted lift trucks for over two years without an overhaul of the engine. Because of the heat, we used to average an engine overhaul every six months when we were using gasoline. The best we ever got was a period of nine or ten months."

Ugite leases a 1700-gal. storage tank to Connelly for \$12.50 per month. The foundation work and the plumbing for this tank were done by the customer. The tank has a company-owned Corken pump and a liquid level gauge. Ugite re-

fills the tank on a weekly schedule.

Each truck, depending upon its size, has either a 33- or 43-lb propane cylinder attached with a spare at the storage tank. When the truck's liquid level gauge shows the cylinder is down to 20 per cent of capacity, the truck is driven to the storage area and the spare is mounted. There is no scheduled changeout, although many times the drivers do pick up a full cylinder if the one on their trucks is anywhere near the 20 per cent mark at the start of the shift. The cylinders, purchased from Ugite, are filled only by Finnegan's mechanics and not by the drivers. ■





The appropriate name for this 125-ft propane storage tank is "Long John." Delta Tank Manufacturing Co. Inc., Baton Rouge, La., is making 10 of these giants for Runnels Gas Products Corp. for installation at Unatex, La. Long John's outside diameter is 12 ft and he weighs 188,375 lb.

LPG storage in the Salado salt formation under the Headlee Devonian field in West Texas has been approved by the Texas Railroad Commission. Texas Gulf Producing Co. will leach out a 50,000 bbl cavity, but it may be enlarged later.

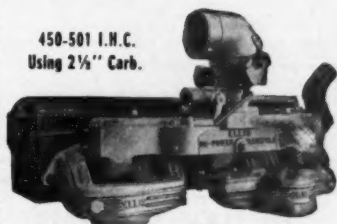
An amendment to the El Paso zoning ordinance was recently approved by the city council. Subject to approval and control of the fire marshal

and the City Planning Department, storage or dispensing of LPG in all districts of the city is now possible. All storage permits are granted for one year.

Esso Standard is expanding LPG underground storage facilities at Sorrento, La., by 350,000 bbl. One new cavity will be drilled 3000 ft in salt-dome formations. Propane storage will then total 1,820,000 bbl. Completion for the facilities is approximately 10 months away.

### DON'T RAISE THAT COMPRESSION! . . . Install an ELLIS (extra cold) MANIFOLD

450-501 I.H.C.  
Using 2 1/2" Carb.



Leading LPG engineers are sold on the merits of Ellis Bu-Power (Extra Cold) Manifolds. These manifolds give high-compression performance with low-compression reliability. Head gasket, ring and bearing troubles are minimized.

Get the most out of your LP truck with an Ellis Dual Exhaust Manifold. This latest addition to the Ellis line has proven far superior to the so-called improved 3 1/2 x 4" exhaust systems in test after test under actual road conditions.

By lowering combustion chamber temperatures and reducing back pressure, Ellis Dual Exhaust increases horsepower. Used with the Bu-Power Manifold, it gives your truck power that equals gasoline horsepower. This is possible only with an Ellis Manifold.

**ELLIS MANIFOLD CO.** Angelus  
3134 East Washington Blvd. 24162  
Los Angeles 23, California Phone

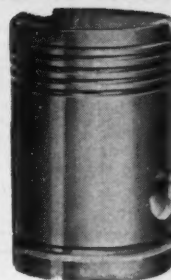
The first step toward an overall effort to conserve casinghead gas in the McComb Field, Miss., began in September by Sun Oil Co., Dallas. Sun Oil's new McComb gasoline plant recovers natural gasoline, butane, and propane from the casinghead gas. After it is compressed and dehydrated, approximately four to five million cu ft per day are delivered to Transcontinental Gas Pipe Line Corp.'s facilities.

White-Rodgers Co., St. Louis, Mo., has recently purchased assets of Robinson Tube Fabricating Co., Conway, Ark., gas burner manufacturer. The newly purchased company's activities will be integrated with those of Configured Tube Products Co., a wholly-owned White-Rodgers subsidiary.

A new service to meet the needs of low-budget management for sales instruction is in the form of long-playing records. Subjects recorded by nationally-known speakers include sales, dealer, distributor, and agent meetings, and management training programs. For full information write Edward M. Miller & Associates, 518 McKay Tower, Grand Rapids 2, Mich.

for long wear  
low vibration  
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Vanasil or  
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Pistons—jump  
power output  
as much as  
25%



MINNEAPOLIS-  
MOLINE  
"U" Vanasil  
Pistons—light-  
weight, yet tough  
as cast iron

LP conversions of John Deere and MM-"U" tractors result in more power and performance with Johnson Vanasil Pistons. Newly patented Vanasil amazingly combines the hardness of cast iron with the lightness of aluminum. Precision Johnson machining and engine "know-how" keeps pistons snug without sticking. Tractor vibration is kept low . . . stalling eliminated . . . pick-up increased.

For John Deere A, G, "50", "60" and "70" . . . also Minneapolis-Moline "U". Johnson Aluminum Pistons are available for John Deere A, B, D, G and H models



**JOHNSON COLD MANIFOLDS FOR LP GAS** keep constant flow at correct temperatures . . . are available for:

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International H, M, W-9  
Allis-Chalmers W, WC, WD, WF  
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MACHINE SHOP**

DEPT. B-36

PONTIAC, ILL.



# CLASSIFIED Advertising

All Classified Advertising payable with order. No agency commission or cash discount on classified advertising. Copy must reach publisher's office prior to the 1st of the month preceding publication. Address: Classified Advertising Materials, BUTANE-PROPANE News, 198 S. Alvarado Street, Los Angeles 57, Calif.

## DISPLAY CLASSIFIED

\$12.00 a column inch per issue. Choice of 18, 14, 12, 10 pt. display type for headings. Set with 1 pt. border. Maximum ad size 3". No cuts permitted. Publisher will set ad for maximum effect in space purchased.

UNDISPLAYED CLASSIFIED 15¢ a word. Set in 6 pt. type without border. \$6.00 minimum charge per insertion. If Blind Box number care of B-P News is used, count as five words.

POSITION WANTED. Undisplayed rate is one half of above rate, payable in advance.

When full payment is made in advance for four consecutive insertions of undisplay classified ads, a 10% discount is allowed.

## SITUATIONS WANTED

EXPERIENCED AND WELL-QUALIFIED IN Sales and Management of Propane Business. 7 years as manager. Age 32. References exchanged. Reply Box 53, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

## HELP WANTED

### SUN OIL COMPANY SOLGAS DIVISION Seeks SALES ENGINEER

Excellent opportunity for man who has considerable experience in L.P.G. Producer sales. Interested qualified applicants are invited to send in writing only, a resume giving full particulars of background to Mr. Harry Maxwell, Jr., Personnel Manager, Sun Oil Company, 1600 Walnut St., Philadelphia 3, Pa.

## BUSINESS OPPORTUNITIES WANTED

WANTED TO PURCHASE: RETAIL LP-GAS business in Midwestern or Southeastern states. Reply Box 13, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

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FOR SALE: THRIVING BUTANE-PROPANE Gas Business located in Northwest Texas, with irrigation, tractor and domestic outlets unlimited. Reason for selling, other business interest. Reply Box 56, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

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Batesville, Ark. — Ph. RI 3-2374

## FOR SALE—TRUCKS - TRAILERS - Cont.

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## WANTED TO BUY

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1, 30,000 gal. propane storage tank with Corken compressor.

The following skid tanks, 2, 3200 gal.; 2, 3200 gal.; 1, 3079 gal.; 1, 2845 gal.; 1, 2650 gal.; 1, 1800 gal.; 3, 1750 gal.

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1, 1911 Restored Maxwell Roadster.

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198 S. Alvarado Street, Los Angeles



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## CALENDAR

All associations  
are invited to send  
in the dates of their  
forthcoming meetings

### 1960

October 31-November 1—Minnesota LPGA Convention—Pick Nicollet Hotel, Minneapolis, Minn.  
November 3-4—14th Annual Home Laundry Conference—Fairmont Hotel, San Francisco, Cal.  
November 14-16—American Petroleum Institute Annual Meeting—Conrad Hilton, Palmer House, and Congress Hotel, Chicago, Ill.  
November 18—NGAA Panhandle-Plains Regional Meeting—The Herring Hotel, Amarillo, Texas.  
November 20-21—Mississippi L. P. Gas Dealers Association Annual Fall Meeting—King Edward Hotel, Jackson, Miss.  
December 5-9—AGA Gas Air Conditioning Sales School—Nationwide Inn, Columbus, Ohio.

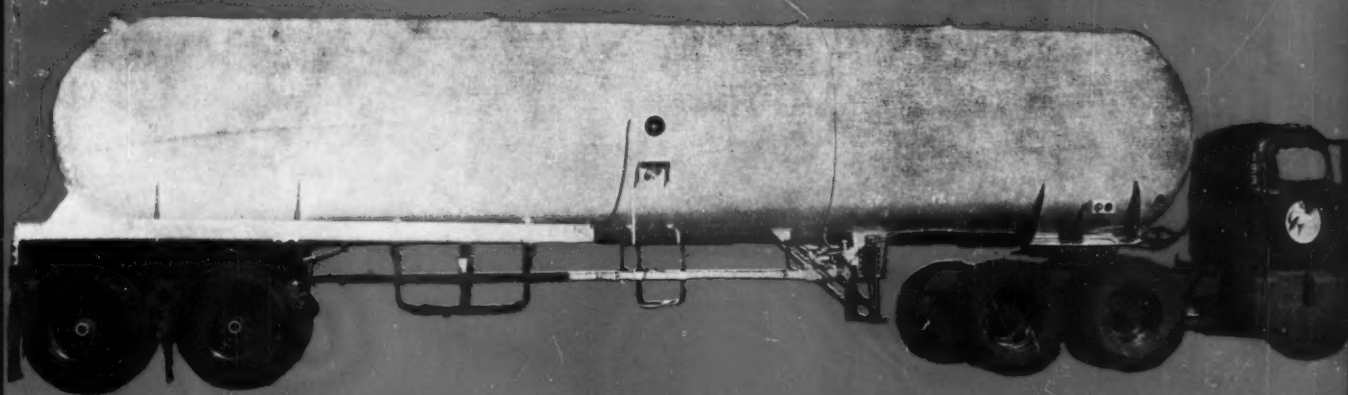
### 1961

January 20—NGAA Gulf Coast Regional Meeting—The Robert Driscoll Hotel, Corpus Christi, Texas.  
February 6-8—Northeast LPGA Convention and Trade Show—Sheraton Park Hotel, Washington, D. C.  
February 13-14—Mid-Pacific Gas Merchandising Conference—Hawaiian Village Hotel, Honolulu, Hawaii.  
February 13-16—American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. Semi Annual Meeting and Exposition—Chicago, Ill.  
February 22-24—Montreal, Canada, Eastern LPGA Trade Show and Convention—Queen Elizabeth Hotel, Montreal, Quebec.  
February 22-24—The Material Handling Institute Pacific Coast Show, Sixth Annual Materials Handling and Packaging Conference—Cow Palace, San Francisco, Cal.  
February 24—NGAA South Louisiana Regional Meeting—Lafayette Petroleum Club, Lafayette, La.  
February 26-March 1—Petrochemical and Refining Exposition—Municipal Auditorium, New Orleans, La.  
March 15-17—NGAA 40th Annual Convention—The Baker and Adolphus Hotels, Texas.  
April 13-15—Western Liquid Gas Association Convention and Trade Show—Hotel El Dorado, Sacramento, Cal.  
April 16-17—Kansas LPGA Convention—Allis Hotel, Wichita, Kan.  
April 16-18—Ohio LPGA Annual Convention and Trade Show—Sheraton Gibson Hotel, Cincinnati, Ohio.  
April 28—NGAA Oklahoma Regional Meeting—Lake Murray Lodge, Ardmore, Okla.  
April 30-May 3—National LPGA Convention and Trade Show—Conrad Hilton Hotel, Chicago, Ill.



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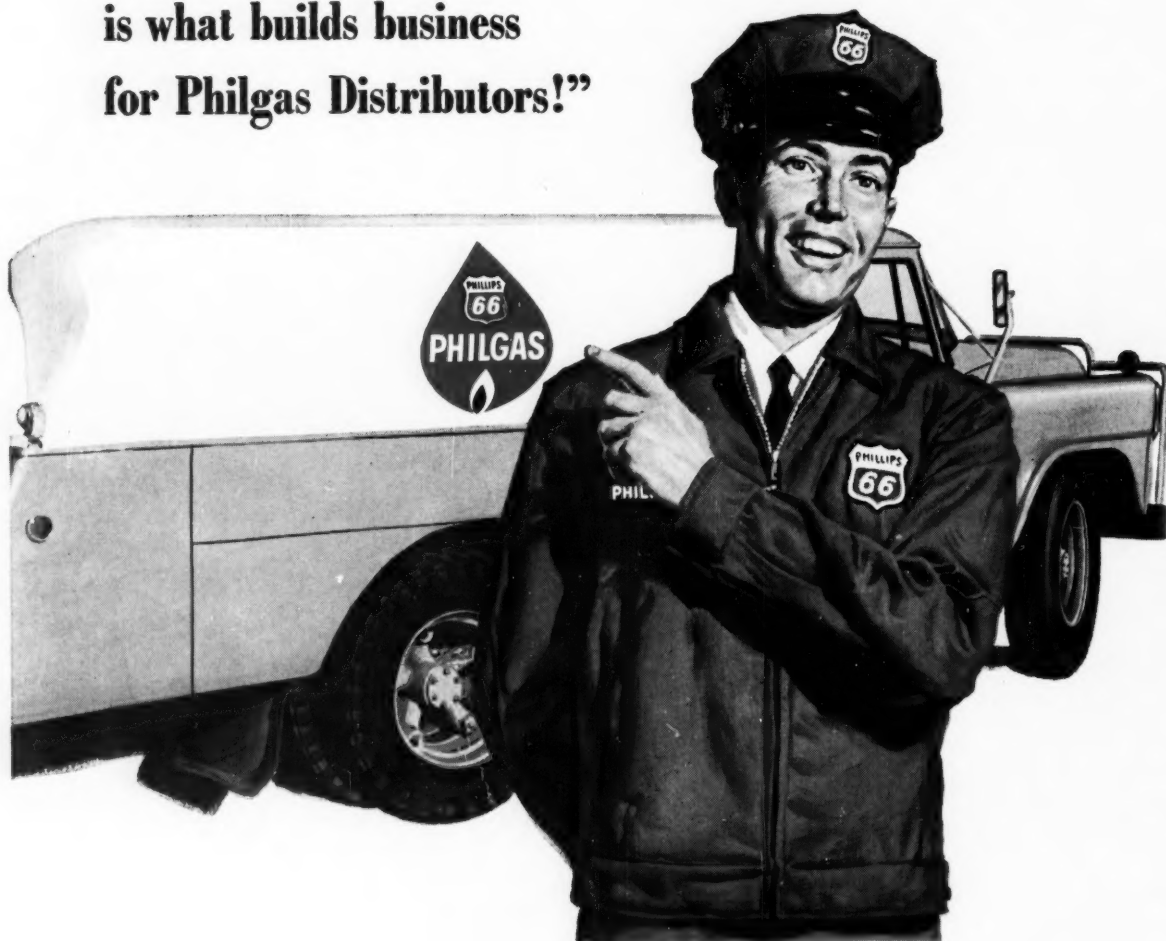
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